



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Wednesday, April 1, 2020
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for LANCASTER 2H
47-095-02675-00-00

Extended lateral to TMD of 16,500' with no additional wells within 500' of lateral.

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

A handwritten signature in blue ink, appearing to read 'James A. Martin', is written over the printed name and title.

Operator's Well Number: LANCASTER 2H
Farm Name: MICHAEL J. & MELINDA R. HOGUE
U.S. WELL NUMBER: 47-095-02675-00-00
Horizontal 6A New Drill
Date Modification Issued: April 1, 2020

Promoting a healthy environment.

WW-6B
(04/15)

API NO. 47-095 - 02675
OPERATOR WELL NO. Lancaster Unit 2H
Well Pad Name: Hogue Pad

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

1) Well Operator: Antero Resources Corporation 494507062 095 - Tyler Ellsworth Middlebourne 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Lancaster Unit 2H Well Pad Name: Hogue Pad

3) Farm Name/Surface Owner: Michael J. & Melinda R. Hogue Public Road Access: Klondike Acres Road

4) Elevation, current ground: 1033' Elevation, proposed post-construction: ~1014.5

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

(b) If Gas Shallow Deep
Horizontal

*90B
3/12/2020*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16500' MD

11) Proposed Horizontal Leg Length: 7715'

12) Approximate Fresh Water Strata Depths: 456'

13) Method to Determine Fresh Water Depths: 47-095-00704

14) Approximate Saltwater Depths: 1581'

15) Approximate Coal Seam Depths: 740'

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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MAR 16 2020

WW-6B
(04/15)

API NO. 47-095 - 02675
 OPERATOR WELL NO. Lancaster Unit 2H
 Well Pad Name: Hogue Pad

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	16"	New	H-40	94#	80	80	CTS, 63 Cu. Ft.
Fresh Water	10 3/4"	New	J-55	40.5#	506 *see # 19	506 *see # 19	CTS, 368 Cu. Ft.
Coal	7-5/8"	New	K-55	26.4#	2500	2500	CTS, 698 Cu. Ft.
Intermediate							
Production	5"	New	P-110	18#	16500	16500	4130 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

JCB
3/12/2020

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	16"	20"	0.438"	2630	50	Class A	~1.2
Fresh Water	10 3/4"	13-1/2"	0.35"	2730	1000	Class A	~1.2
Coal	7-5/8"	9 7/8"	0.328"	4140	1500	Class A	~1.2
Intermediate							
Production	5"	6 3/4"	0.362"	15840	2500	Class H	~1.26
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

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WV Department of
Environmental Protection

WW-6B
(10/14)

API NO. 47-095 - 02675

OPERATOR WELL NO. Lancaster Unit 2H

Well Pad Name: Hogue 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 fresh water 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): 28.10 acres

22) Area to be disturbed for well pad only, less access road (acres): 12.79 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.

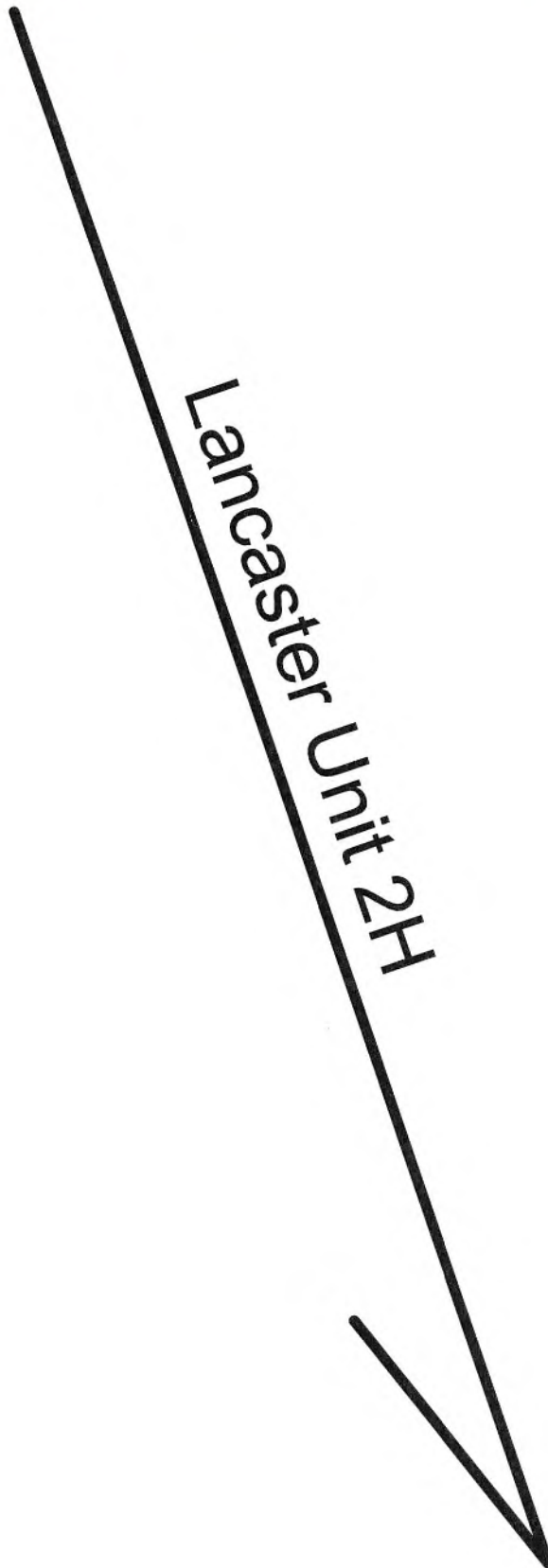
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

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.

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*Note: Attach additional sheets as needed.



Antero Resources Corporation

Lancaster Unit 2H - AOR



REMARKS
No Wells of Interest

October 30, 2019

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WV Department of
Environmental Protection

MOD

WW-6A1

Operator's Well Number Lancaster 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:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Michael J. & Melinda R. Hogue Lease (TM 20 PCL 108)			
Michael J. & Melinda R. Hogue	Statoil USA Onshore Properties Inc.	1/8	0449/0283
Statoil USA Onshore Properties Inc.	EQT Production Company	Assignment	0539/0239
EQT Production Company	Antero Resources Corporation	Assignment	0663/0001
Ridgetop Capital LP Lease			
Ridgetop Capital LP	Antero Resources Corporation	1/8+	0634/0345
James F. Doan et ux Lease			
James F. Doan et ux	Chesapeake Appalachia	1/8	0376/0345
Chesapeake Appalachia	SWN Production Company LLC	Assignment	0465/0463
SWN Production Company	Antero Exchange Properties	Assignment	0544/0242
Antero Exchange Properties	Antero Resources Corporation	Merger	0552/0315
Michael J. & Melinda R. Hogue Lease (TM 26 PCL 46.1)			
Michael J. & Melinda R. Hogue	Statoil USA Onshore Properties Inc.	1/8	0449/0283
Statoil USA Onshore Properties Inc.	EQT Production Company	Assignment	0539/0239
EQT Production Company	Antero Resources Corporation	Assignment	0663/0001
Eugene F. Howell et ux Lease			
Eugene F. Howell et ux	Antero Resources Corporation	1/8	0635/0203
Robert C. Kramer Lease			
Robert C. Kramer	Antero Resources Corporation	1/8+	0553/0168
Bernard M. Hayes et ux Lease			
Bernard M. Hayes et ux	Antero Resources Appalachian Corporation	1/8+	0397/0492
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Charles E. Anderson Lease			
Charles E. Anderson	Chesapeake Appalachia LLC	1/8+	0465/0463
Chesapeake Appalachia LLC	SWN Production Company	Assignment	0544/0242
SWN Production Company	Antero Exchange Properties	Assignment	0552/0315
Antero Exchange Properties	Antero Resources Corporation	Name Change	Exhibit 1
WV Division of Natural Resources Lease			
WV Division of Natural Resources	Antero Resources Corporation	1/8+	0648/0563

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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. Lancaster 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
<u>John Valentour Lease</u>	John Valentour	Antero Resources Corporation	1/8+	0555/0108

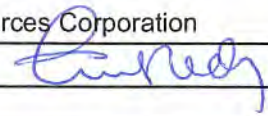
*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Antero Resources Corporation
 By: Tim Rady 
 Its: VP of Land

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WV Department of
Environmental Protection

**FORM WW-6A1
EXHIBIT 1**

FILED

JUN 10 2013

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



IN THE OFFICE OF
SECRETARY OF STATE

Penny Baker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvscd.com
E-mail: business@wvscd.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.)
Alwyn A. Schopp (304) 367-7310
Contact Name Phone Number

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

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

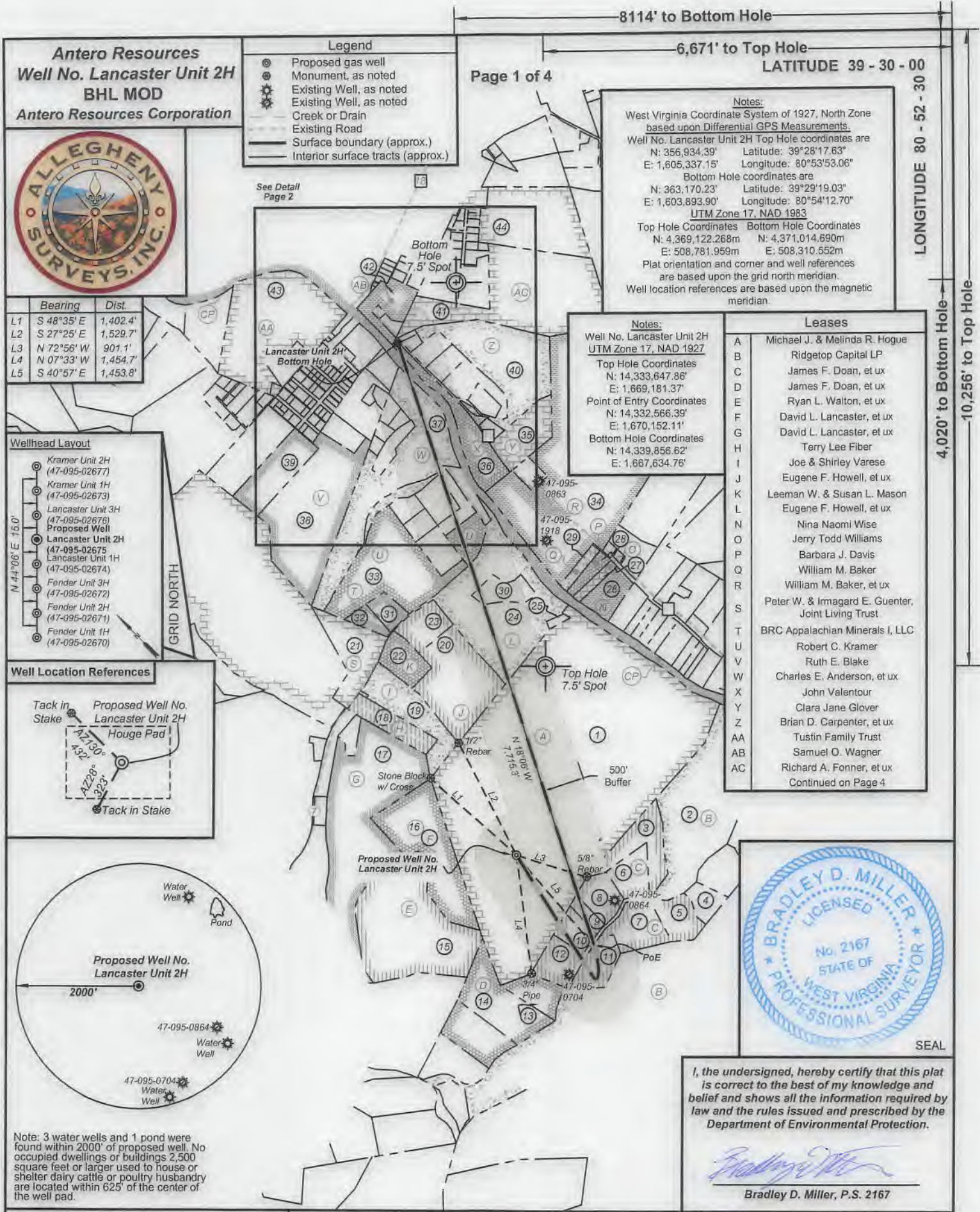
Signatures: *Alwyn A. Schopp* Date: June 10, 2013

Important Legal Notice Regarding Signatures For West Virginia Code §31D-1-12b. Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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Environmental Protection



Antero Resources
Well No. Lancaster Unit 2H
BHL MOD
Antero Resources Corporation



Bearing	Dist.
L1 S 48°35' E	1,402.4'
L2 S 27°25' E	1,529.7'
L3 N 72°56' W	901.1'
L4 N 07°33' W	1,454.7'
L5 S 40°57' E	1,453.8'

- Legend**
- ⊙ Proposed gas well
 - ⊛ Monument, as noted
 - ⊙ Existing Well, as noted
 - ⊙ Existing Well, as noted
 - Creek or Drain
 - Existing Road
 - Surface boundary (approx.)
 - Interior surface tracts (approx.)

Page 1 of 4

8114' to Bottom Hole

6,671' to Top Hole

LATITUDE 39 - 30 - 00

LONGITUDE 80 - 52 - 30

4,020' to Bottom Hole

10,256' to Top Hole

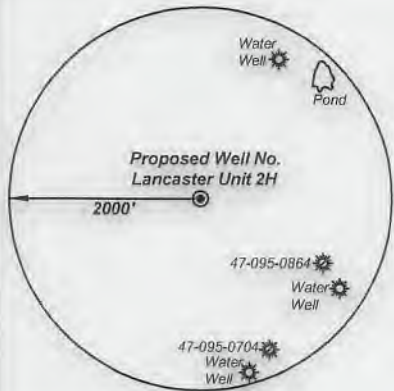
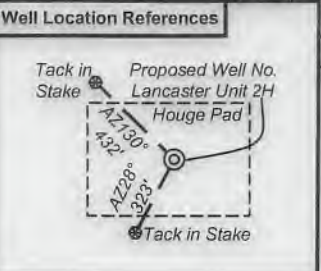
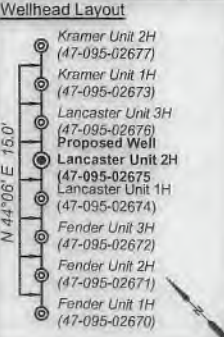
Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Lancaster Unit 2H Top Hole coordinates are
 N: 356,934.39' Latitude: 39°28'17.63"
 E: 1,605,337.15' Longitude: 80°53'53.06"
 Bottom Hole coordinates are
 N: 363,170.23' Latitude: 39°29'19.03"
 E: 1,603,893.90' Longitude: 80°54'12.70"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,369,122.268m N: 4,371,014.690m
 E: 508,781,959m E: 508,310.552m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

Notes:
 Well No. Lancaster Unit 2H UTM Zone 17, NAD 1927
 Top Hole Coordinates
 N: 14,333,647.86'
 E: 1,669,181.37'
 Point of Entry Coordinates
 N: 14,332,566.39'
 E: 1,670,152.11'
 Bottom Hole Coordinates
 N: 14,339,856.62'
 E: 1,667,634.76'

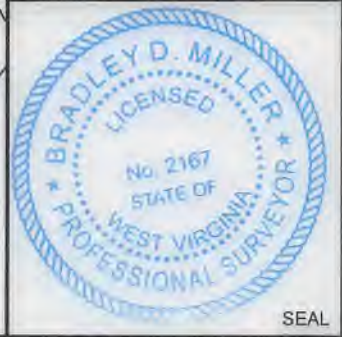
Leases

A	Michael J. & Melinda R. Hogue
B	Ridgetop Capital LP
C	James F. Doan, et ux
D	James F. Doan, et ux
E	Ryan L. Walton, et ux
F	David L. Lancaster, et ux
G	David L. Lancaster, et ux
H	Terry Lee Fiber
I	Joe & Shirley Varese
J	Eugene F. Howell, et ux
K	Leeman W. & Susan L. Mason
L	Eugene F. Howell, et ux
N	Nina Naomi Wise
O	Jerry Todd Williams
P	Barbara J. Davis
Q	William M. Baker
R	William M. Baker, et ux
S	Peter W. & Immagard E. Guenter, Joint Living Trust
T	BRC Appalachian Minerals I, LLC
U	Robert C. Kramer
V	Ruth E. Blake
W	Charles E. Anderson, et ux
X	John Valentour
Y	Clara Jane Glover
Z	Brian D. Carpenter, et ux
AA	Tustin Family Trust
AB	Samuel O. Wagner
AC	Richard A. Fonner, et ux

Continued on Page 4



Note: 3 water wells and 1 pond 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.



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.

Bradley D. Miller
 Bradley D. Miller, P.S. 2167

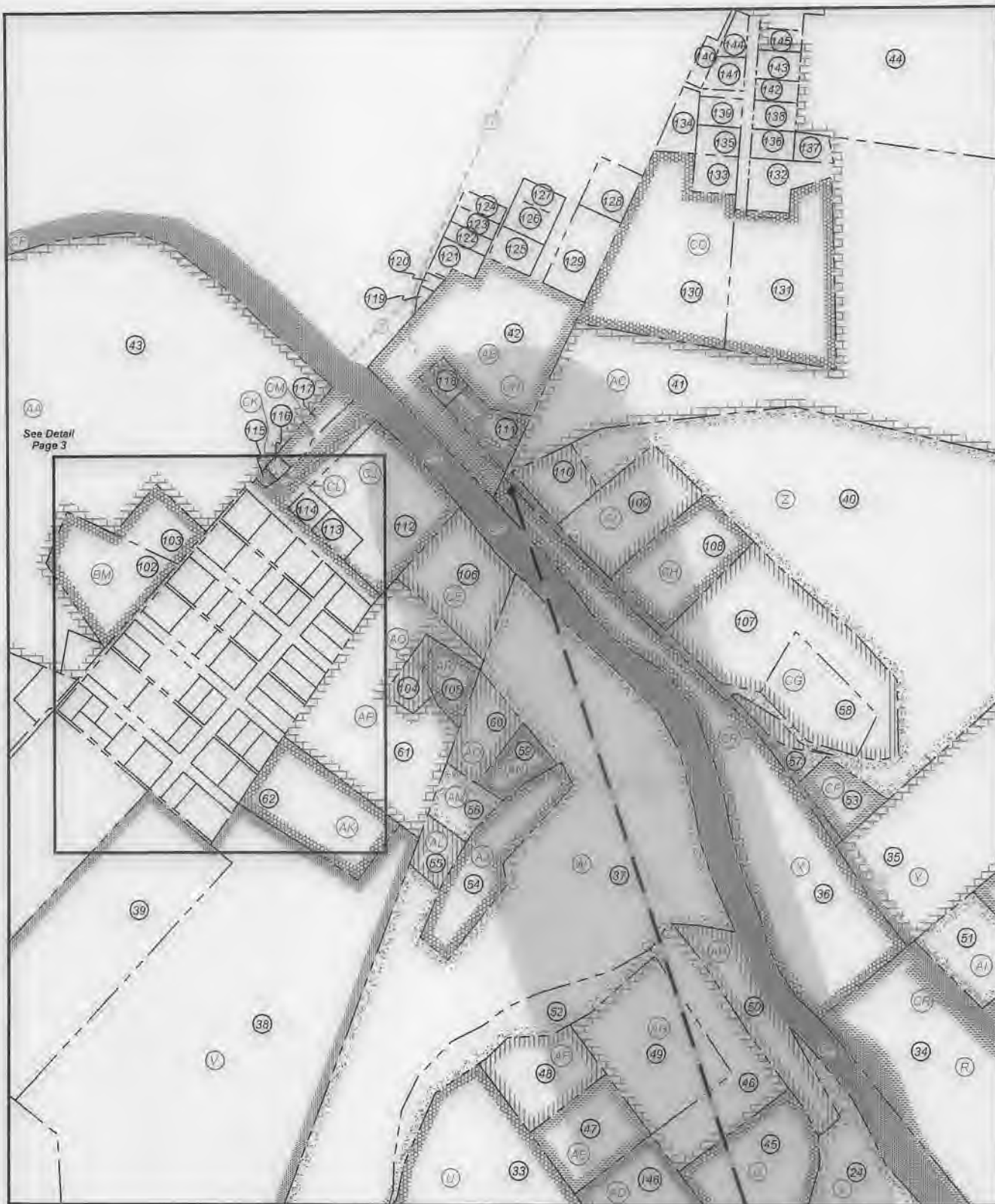
FILE NO: 11-54-E-19
 DRAWING NO: Lancaster Unit 2H Well Plat
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

DATE: March 2 2020
 OPERATOR'S WELL NO. Lancaster 2H
 API WELL NO
 47 - 095 - 02675 MOD
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 Proposed 1,014.5'
 LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
 DISTRICT: Ellsworth COUNTY: Tyler
 SURFACE OWNER: Michael J. & Melinda R. Hogue WV Division of Natural Resources; Robert C. Kramer; WV Dept. of Transportation, DOH; John Valentour; Eugene F. Howell, et ux; Charles E. Anderson, et ux; Bernard M. Hayes, et ux; ACREAGE: 192.0 6.95064; 89.53875;
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux; Ridgetop Capital LP. LEASE NO: ACREAGE: 7.16; 23.964; 28.54
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,900' TVD 16,500' 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



FILE NO: 11-54-E-19
 DRAWING NO: Lancaster Unit 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: March 2 20 20

OPERATOR'S WELL NO. Lancaster 2H

API WELL NO

47 - 095 - 02675 MOD
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

Proposed 1,014.5'

LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne

DISTRICT: Ellsworth

COUNTY: Tyler

SURFACE OWNER: Michael J. & Melinda R. Hogue
 WY Division of Natural Resources: Robert C. Kramer; WV Dept. of Transportation, DOH; John Valentour; Eugene F. Howell, et ux; Charles E. Anderson, et ux; Bernard M. Hayes, et ux;

ACREAGE: 192.0 191.5; 81.33; 47.016; 310.393; 29.806;

ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux; Ridgetop Capital LP. LEASE NO: ACREAGE: 7.16; 23.964; 28.54

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,900' TVD 16,500' MD

WELL OPERATOR: Antero Resources Corporation

DESIGNATED AGENT: Dianna Stamper - CT Corporation System

ADDRESS: 1615 Wynkoop Street
 Denver, CO 80202

ADDRESS: 5400 D Big Tyler Road
 Charleston, WV 25313



FILE NO: 11-54-E-19
DRAWING NO: Lancaster Unit 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: March 2 2020
OPERATOR'S WELL NO. Lancaster 2H
API WELL NO
47 - 095 - 02675
STATE COUNTY PERMIT

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ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

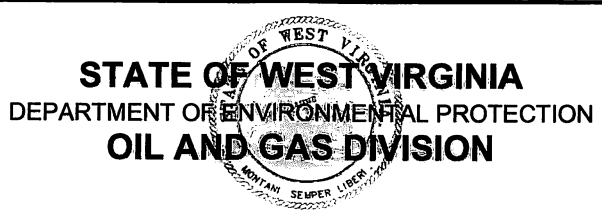
Antero Resources
Well No. Lancaster Unit 2H
BHL MOD
Antero Resources Corporation

Page 4 of 4

Leases	
AD	Robert C. Kramer
AE	Gary R. Davis
AF	Brian Scott Foland
AG	Bernard M. Hayes, et ux
AH	Robert L. Berry, et ux
AI	Bradley Baker
AJ	Frankie Dean Goudy, et ux
AK	Earnestine Pelikan & David Leasure
AL	Larry H. Kimble, et ux
AM	David I. Farhatt, et ux
AN	Lemuel Hugh Moore
AO	Jeffrey A. Lancaster, et ux
AP	Earnestine Pelikan
AQ	Melinda Leasure
AR	Earnestine Pelikan, et vir
AS	Bessie L. Matthews, et vir
AT	Betty Lou Hadley
AU	Betty Lou Hadley
AV	Betty Lou Hadley
AW	Betty Lou Hadley
AX	Stephen D. Ashley, et ux
AY	Martha J. Hayes, et vir
AZ	Betty Lou Hadley
BA	Betty Lou Hadley
BB	Betty Lou Smith
BC	Betty Hadley
BD	Laura June Smith
BE	Kathryn Knowlton
BF	Crystal Christophel
BG	Betty Lou Hadley
BH	Rodney Mack Hayes
BI	Betty Hadley
BJ	Betty Lou Hadley
BK	Donald E. Huffman
BL	Timothy Stanley, et ux
BM	David A. Tustin
BN	Nancy Glover
BO	William H. Eddy
BP	John Miller, et ux
BQ	John R. Miller, et ux
BR	Rodney Mack Hayes
BS	Rodney Mack Hayes
BT	Earl E. Turner
BU	Avril Shane Matthews
BV	Thurl Wayne Jones
BW	Brenda Lee Oyster
BX	Brenda Lee Oyster
BY	James W. Chapman
BZ	Charles L. Roberts
CA	Robert E. Judge
CB	Carolyn Westfall Barnhart
CC	Charles J. Mead, et ux
CD	Anna Blanche Cline
CE	Upper Ohio Soil Conservation
CF	Jeffrey A. Watson, et ux
CG	John F. Stender, et ux
CH	Neil A. Archer II
CI	Clara Catherine Spencer Wells
CJ	Tyler County Board of Education
CK	James D. Hardesty
CL	Antero Resources Corporation
CM	Tyler County Commission
CN	Kathleen Ross Mansuetto
CO	Michael A. Lenz, et ux
CP	WV Division of Natural Resources
CQ	Sara J. Judge
CR	WV Dept. of Transportation, DOH

ID	TM/Par	Owner	Bk/Pg	Acres	ID	TM/Par	Owner	Bk/Pg	Acres
1	20-108	Michael J. & Melinda R. Hogue	348/404	192.00	74	20A-18	Roy D. Hadley	WB23/305	0.66
2	26-46	Jay-Bee Production Company	420/97	286.04	75	20A-16	James M. Glover	330/197	0.50
3	26-46.14	Jay-Bee Production Company	420/97	8.69	76	20A-17	Christopher L. Hayes, et al	342/212	0.17
4	26-46.12	Charles R. Holliday, et ux	306/665	3.238	77	20A-49.1	Roy D. Hadley	299/37	0.24
5	26-46.3	Timothy Kanz	440/24	5.4	78	20A-49	Rodney M. Hayes	353/649	0.48
6	26-46.2	Robert E. Lee II, et al	408/122	5.135	79	20A-48	Rodney M. Hayes	353/649	0.22
7	26-46.7	Camille Patera	296/247	7.32	80	20A-47	Rodney Mack Hayes	336/609	0.21
8	26-46.9	Eugene B. Johnson, Jr, et ux	351/160	5.00	81	20A-21	Roy D. Hadley	317/647	0.33
9	26-46.6	Camille Patera	296/247	1.702	82	20A-22	Roy D. Hadley	WB23/305	0.17
10	26-46.15	Camille Patera	296/247	3.722	83	20A-23	Connie Sue Tanner	327/883	0.33
11	26-46.1	Darrell L. Shrader	348/711	5.58	84	20A-24	Timothy & Tonya Stanley	581/792	0.33
12	26-46.16	Jay-Bee Production Company	420/97	5.09	85	20A-25	Nancy Glover	147/104	0.33
13	26-46.10	Leon & Drema Gailson	359/673	4.98	86	20A-26.1	Evelyn S. Smith	328/95	0.165
14	26-46.5	Richard Doty	493/673	13.14	87	20A-26	Evelyn S. Smith	332/691	0.165
15	26-21	Ryan Lee Walton, et ux	342/687	35.9	88	20A-27	John R. & Shirley R. Miller	227/273	0.17
16	20-107	David L. & Kathy A. Lancaster	314/344	18.89	89	20A-28	John R. & Shirley R. Miller	269/669	0.33
17	20-104	David Lancaster	210/505	57.004	90	20A-46	Emily L. Eddy	336/590	0.20
18	20-105.1	Terry Lee Fiber	335/682	6.06	91	20A-45	Arvil Shane Matthews	431/116	0.19
19	20-105	Joe & Shirley Varse	352/736	11.322	92	20A-44	Anna Blanche Cline	WB31/662	0.34
20	20-106	Eugene & Phyllis Howell	223/371	19.76	93	20A-29	Joe & Shirley Varse	361/88	0.17
21	20-99	Pioneer Land Company, LLC	431/414	10	94	20A-30	John M. Hammell, et al	WV37/331	0.17
22	20-106.1	Lee Ann Hall	486/806	5.493	95	20A-31	John M. Hammell, et al	WV37/331	0.17
23	20-106.2	Nancy Forester	328/633	5.429	96	20A-43	Charles J. & Donna Mead	344/588	0.17
24	20-100	Eugene F. & Phyllis Howell	326/749	42.85	97	20A-41	Carolyn Barnhart	348/286	0.34
25	20-101	Henderson Cemetery	OS15/137	0.78	98	20A-40	Barry W. & Linda K. Harter	288/516	0.36
26	20-70	Nina Wise	WB25/700	3.91	99	20A-32	James W. Chapman	348/630	0.33
27	20-69	Jerry Williams, et al	440/471	1.5	100	20A-33	Charles L. & Karen S. Roberts	306/558	0.55
28	20-68	Barbara J. Davis	WB30/311	2.09	101	20A-34	Robert E. Judge	545/765	0.37
29	20-67	William M. & Janet S. Baker	175/391	2.10	102	20-46.1	Betty Tustin	WB45/156	2.476
30	20-100.1	Jacqueline E. Miller	375/626	4.202	103	20-47	Betty Tustin	WB45/156	1
31	20-93.5	Nina Smith & Mary Bennett	308/115	2.88	104	20-87.2	David & Melinda Leasure	252/581	0.50
32	20-93.1	Vernon Stevens	423/703	2.14	105	20-87.1	Earnestine & William Pelikan	242/631	0.77
33	20-93	Robert C. Kramer	547/650	23.964	106	20-88	Upper Ohio Soil Conservation Dist.	233/495	2.36
34	20-54	William M. Baker, et ux	175/391	100.45	107	20-51.3	John & Diana Stender	269/180	2.04
35	20-53	Clara Negie	344/51	8	108	20-51.5	Neil Archer	355/12	2.513
36	20-57	William M. Baker, et ux	189/374	7.5	109	20-51.4	Clara Wells	342/464	2.512
37	20-92	Charles & Doris Anderson	210/359	27	110	20-51	Clara Wells	342/464	1.005
38	20-86	Ruth E. Blake	317/103	23.75	111	20-50	Thomas Wagner	356/410	0.93
39	20-44.1	Ruth E. Blake	317/103	10.17	112	20A-38	Tyler County BOE	211/575	2.5
40	20-51.6	Brian & Sarah Carpenter	342/467	24.92	113	20A-42	Tyler County BOE	175/181	0.22
41	20-33	Lance M. & Tina R. Hickman	396/561	77.84	114	20A-3	Tyler County BOE	143/292	0.26
42	20-49	Samuel O. Wagner	327/411	3.37	115	20A-35	James D. Hardesty	372/186	0.06
43	20-46	Betty Tustin	350/386	29.66	116	20A-36	Tina M. Barnhart	373/828	0.08
44	20-33.3	Richard Fonner	415/796	18.5	117	20A-37	Tyler County Commission	332/574	0.50
45	20-93.7	Charles & Tara Templeton	234/790	4.05	118	20-48	Tyler County Commission	336/13	0.30
46	20-93.3	Wanna Hayes	347/293	3.25	119	4-128	Patty K. Long	AR45/571	0.10
47	20-93.2	Brian Scott Foland	WB58/423	2	120	4-126	William Long	WB32/551	0.07
48	20-93.4	Brian Scott Foland	WB58/423	2	121	4-112	James A. White II	357/177	0.285
49	20-95	Bernard & Tammie Hayes	321/108	3.91	122	4-113	Patricia Hess	249/263	0.22
50	20-96	Robert L. & Dorothy L. Berry	230/37	2.416	123	4-114	Donnie G. & Tawnya D. Rose	353/475	0.22
51	20-54.1	Bradley Baker	355/823	2	124	4-115	Kenneth I. Sinclair	342/566	0.22
52	20-94	Charles & Doris Anderson	217/398	2.806	125	4-120	Ann W. Galindo	WB25/479	0.44
53	20-52	Jeffery & Deborah Watson	270/234	1.03	126	4-121	Kenneth I. Sinclair	342/566	0.386
54	20-90	F. Dean & Shirley Kimble	303/340	2.42	127	4-122	Joseph E. McLaughlin, et ux	432/294	0.276
55	20-91	Larry H. & Shirley I. Kimble	212/435	1.13	128	4-125.1	James A. & Heidi M. Suter	354/511	0.66
56	20-89.2	David L. & Pamela C. Farhatt	375/1	0.848	129	4-125	Ann W. Galindo	WB25/479	0.88
57	20-51.2	John & Diana Stender	255/47	0.32	130	20-23.1	Michael & Chris Lenz	323/732	5.517
58	20-51.1	John & Diana Stender	255/47	2.04	131	20-23	Michael & Chris Lenz	313/216	4.595
59	20-89	John F. & Hailee Stender	538/343	0.92	132	20-25	Marshal McKinney	208/650	0.92
60	20-89.1	Jeffery A. Lancaster, et ux	348/471	1.18	133	20-24	Leslie A. Henderson	312/293	0.34
61	20-87	Earnest Leasure, et al	275/579	6.39	134	20-26	Nancy Mercer	198/157	0.52
62	20-86.1	Earnest Leasure, et al	321/160	3.37	135	20-22	Nancy Mercer	WB32/425	0.34
63	20A-54	Bessie L. Matthews, et vir	521/634	0.46	136	20-32	Homer Lee Matthews	176/216	0.34
64	20A-55	Roy & Betty Lou Hadley	350/341	0.17	137	20-33.2	Homer Matthews	284/375	0.28
65	20A-53	Deloris Guley	AR40/97	0.33	138	20-31	Larry & Barbara Lee	211/179	0.34
66	20A-52	Betty Lou Hadley	579/652	0.2433	139	20-21	Nancy Mercer	WB32/425	0.34
67	20A-51.1	Crystal Christophel	WB19/379	0.16	140	20-109	Lorraine Weekley	AR49/717	0.24
68	20A-51	Shiri A. Henderson	WB19/379	0.17	141	20-27	Earl P. & Crucita Kandle	331/341	0.32
69	20A-50	Laura June Smith	AR48/562	0.1653	142	20-29.1	James Bembry	331/443	0.25
70	20A14	Roy D. Hadley	322/696	0.17	143	20-29	Maurine Hadley	167/69	0.34
71	20A-15	Stephen & Brenda J. Ashley	317/183	0.50	144	20-28	Victor & Lorraine Weekley	280/422	0.23
72	20A-20	Betty Hadley	470/683	0.1653	145	20-30	Donald & Susan Smith	321/422	0.26
73	20A-19	Roy D. Hadley	WB23/305	0.17	146	20-93.6	Robert C. Kramer	547/650	4.0

FILE NO: 11-54-E-19
 DRAWING NO: Lancaster Unit 2H Well Plat
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV



DATE: March 2 2020
 OPERATOR'S WELL NO. Lancaster 2H
 API WELL NO
47 - 095 - 02675
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
 DISTRICT: Ellsworth COUNTY: Tyler
 SURFACE OWNER: Michael J. & Melinda R. Hogue WV Division of Natural Resources; Robert C. Kramer; WV Dept. of Transportation, DOH; John Valentour; Eugene F. Howell, et ux; Charles E. Anderson, et ux; Bernard M. Hayes, et ux; ACREAGE: 192.0 6.95064; 89.53875; 191.5; 81.33; 47.016; 310.393; 29.806;
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux; Ridgetop Capital LP; LEASE NO: _____ ACREAGE: 7.16; 23.964; 28.54
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 6,900' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 16,500' 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

March 4, 2020

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. Laura Adkins
601 57th Street
Charleston, WV 25304

Ms. Laura Adkins:

Antero Resources Corporation (Antero) would like to submit the following permit modification for an approved well on the existing Hogue Pad: Lancaster Unit 2H (API # 47-095-02675) & Lancaster Unit 3H (API # 47-095-02676).

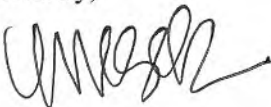
Attached you will find the following documents:

- REVISED Form WW-6B, which shows the updated POE & Measured Depth
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plat, which shows the new Lateral Length & Estimated Measured Depth
- AOR & As-Built Design

If you have any questions please feel free to contact me at (303) 357-7223.

Thank you in advance for your consideration.

Sincerely,



Megan Griffith
Permitting Agent
Antero Resources Corporation

Enclosures

RECEIVED
Office of Oil and Gas
MAR 06 2020
WV Department of
Environmental Protection

Adkins, Laura L

From: Dani Devito <ddevito@shalepro.com>
Sent: Monday, March 30, 2020 3:35 PM
To: Adkins, Laura L
Subject: [External] Lancaster 2H Mod

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Laura,
For the Lancaster 2H Mod (095-02675) there were no additional wells within the buffer and no changes to the collision avoidance needed.

Thanks!

Dani

Dani DeVito
Director, Permitting & Marketing



304.709.7100 ext. 103
304.288.7104

www.shalepro.com