



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

March 31, 2016

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for API Number 8510274, Well #: ALLIANCE UNIT 1H

Modified 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,

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

Promoting a healthy environment.

04/01/2016

WW-6B
(04/15)

API NO. 47-085 - 10274

OPERATOR WELL NO. Alliance Unit 1H

Well Pad Name: Zinn Pad

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

1) Well Operator: Antero Resources Corporal 494488557 085 - Ritchie Clay Pennsboro 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Alliance Unit 1H Well Pad Name: Zinn Pad

3) Farm Name/Surface Owner: Earnest E. Zinn, et al Public Road Access: CR 74/9

4) Elevation, current ground: 1135' Elevation, proposed post-construction: 1119'

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: 6700' TVD, Anticipated Thickness- 75 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6700' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,000' MD

11) Proposed Horizontal Leg Length: 9056'

12) Approximate Fresh Water Strata Depths: 107', 431', 497'

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

14) Approximate Saltwater Depths: 1141', 1567'

15) Approximate Coal Seam Depths: 412', 741'

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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FEB 08 2016

WW-6B
(04/15)

API NO. 47- 085 - 10274

OPERATOR WELL NO. Alliance Unit 1H

Well Pad Name: Zinn 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	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	550'	550' *see #19	CTS, 764 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2450'	2450'	CTS, 998 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	17,000'	17,000'	CTS, 4282 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

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	30"	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"	12,630	2500	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

Kind:	N/A			
Sizes:	N/A			Received Office of Oil & Gas
Depths Set:	N/A			FEB 08 2016

WW-6B
(10/14)

API NO. 47- 085 - 10274

OPERATOR WELL NO. Alliance Unit 1H

Well Pad Name: Zinn 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): 27.20 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.27 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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FEB 08 2016

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

**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>Harold H. Bloch, et ux Lease</u>			
Harold H. Bloch, et ux	Harvey K. Haymond	1/8	0131/0670
Harvey K. Haymond	J & J Enterprises, Inc.	Assignment	0156/0715
J & J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	0231/0732
Eastern American Energy Corporation	Energy Corporation of America	Assignment	0306/0836
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0377
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Steve Jackson Lease</u>			
Steve Jackson	Antero Resources Appalachian Corporation	1/8+	0257/0716
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Ronald J. Castelow Lease</u>			
Ronald J. Castelow	Antero Resources Corporation	1/8+	0290/0643
<u>Marleen L. Taylor Lease</u>			
Marleen L. Taylor	Antero Resources Corporation	1/8+	0271/0121
<u>M.H. Jones, et ux Lease</u>			
M.H. Jones, et ux	P.G. McKeon	1/8	0032/0025
P.G. McKeon	Carnegie Natural Gas	Assignment	0041/0357
Carnegie Natural Gas	Carnegie Production Company	Assignment	0228/0859
Carnegie Production Company	EQT Production Company	Certificate of Registration of Trade Name	Exhibit 2
EQT Production Company	Antero Resources Corporation	*Partial Assignment	0282/0175
<u>Lewis Huff, et ux Lease</u>			
Lewis B. Huff, et ux	Robert P. Jackson	1/8	0155/0442
Robert P. Jackson	Kepeco, Inc.	Assignment	0168/0595
Kepeco, Inc.	Eastern Kentucky Production Company	Name Change	Exhibit 3
Eastern Kentucky Production Company	Kepeco Resources, Inc.	Assignment	0188/0061
Kepeco Resources, Inc.	Union Drilling, Inc.	Merger	CRB 0004/0322
Union Drilling, Inc.	Equitable Resources Exploration, Inc.	Merger	DB 0227/0201
Equitable Resources Exploration, Inc.	Equitable Resources Energy Company	Merger	DB 0230/0047
Equitable Resources Energy Company	Enervest East Limited Partnership	Assignment	0222/0273
Enervest East Limited Partnership	The Houston Exploration Company	Assignment	0234/0890
The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.	Assignment	0236/0650
Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC	Assignment	DB 0311/0863
Seneca-Upshur Petroleum, LLC	Alliance Petroleum Corporation	Assignment	0269/0062
Alliance Petroleum Corporation	Antero Resources Appalachian Corporation	*Partial Assignment	0256/0001
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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 Office of Oil & Gas
 FEB 08 2016

*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.

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Chapter 22, Article 6A, Section 5(a)(5)
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- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
B.C. Hammond, et ux Lease			
B.C. Hammond, et ux	McCall Drilling Company, Inc.	1/8	0057/0131
McCall Drilling Company, Inc.	Burnt House Oil & Gas Company	Assignment	0102/0565
Burnt House Oil & Gas Company	Lewis B. Huff	Assignment	0114/0620
Lewis B. Huff	Penn Resources, Inc.	Assignment	0114/0647
Penn Resources, Inc.	Seco Oil & Gas, Inc.	Assignment	0138/0378
Seco Oil & Gas, Inc.	Metroplex Energy, Inc.	Assignment	0139/0788
Metroplex Energy, Inc.	Seco Oil & Gas, Inc.	Assignment	0140/0716
Seco Oil & Gas, Inc.	Walter C. Crane and Carroll W. Thompson, d/b/a North Hills Investment Company	Assignment	0208/0296
Walter C. Crane and Carroll W. Thompson, d/b/a North Hills Investment Company	J.F. Deem Oil & Gas, LLC	Assignment	0252/0232
J.F. Deem Oil & Gas, LLC	Antero Resources Appalachian Corporation	Assignment	0262/0646
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Richard Shahan, et ux Lease			
Richard A. Shahan	Antero Resources Corporation	1/8	0288/0098
John H. Miller, et ux Lease (TM 20-12.1)			
John H. Miller, et ux	Antero Resources Appalachian Corporation	1/8+	0259/0642
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Maggie Garner Lease			
Maggie V. Garner	Clifton Oil & Gas Company	1/8	0066/0467
Clifton Oil & Gas Company	Pennzoil Company	Assignment	0107/0253
Pennzoil Company	Quaker State Oil Refinery Corporation	Assignment	0107/0255
Quaker State Oil Refinery Corporation	Bryson M. Garner, et ux	Assignment	0108/0309
Bryson M. Garner, et ux	Perkins Production Company, LLC	Assignment	0108/0493
Perkins Production Company, LLC	Antero Resources Corporation	Assignment	0264/1045
John Miller, et ux Lease (TM 20-12.2)			
John H. Miller, et ux	Antero Resources Appalachian Corporation	1/8+	0259/0637
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Carlton Boyce, et ux Lease			
Carlton Boyce, et ux	B & M Associates	1/8	0217/0365
B & M Associates	Key Oil Company	Assignment	0217/0585
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0253/0747
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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FEB 08 2016

*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. Alliance 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)**

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Gerald Hall Lease	Gerald S. Hall	Antero Resources Corporation	1/8+	0280/1006

*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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FEB 08 2016

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 *Kevin Kilstrom*
Its: Senior VP of Production

85-10274 jep

**FORM WW-6A1
EXHIBIT 1**

FILED
JUN 10 2013



Natalie E. Tennant
Secretary of State
1900 Kanawha Blvd E
Bldg 1, Suite 137-K
Charleston, WV 25305

Penny Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsoa.com
E-mail: business@wvsoa.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 Med
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: 6/25/2008
- 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.)

<u>Alvyn A. Schopp</u>	<u>(304) 357-7310</u>
Contact Name	Phone Number

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FEB 08 2015

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.

BS 10274 AC
MD

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

Received
Office of Oil & Gas
FEB 08 2016



*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

FORM WW-6A1
EXHIBIT 3

85-10274 MOD

Commonwealth of Kentucky

OFFICE OF
SECRETARY OF STATE

DREXELL R. DAVIS
Secretary



FRANKFORT,
KENTUCKY

CERTIFICATE OF AMENDMENT TO ARTICLES OF INCORPORATION

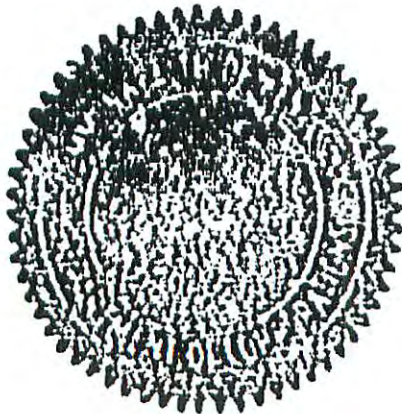
I, DREXELL R. DAVIS, Secretary of State of the Commonwealth of Kentucky, do hereby certify that Amended Articles of Incorporation of

KEPCO, INC.

CHANGING NAME TO EASTERN KENTUCKY PRODUCTION COMPANY

amended pursuant to Kentucky Revised Statutes, 271A. ~~(273)~~ duly signed and verified or acknowledged according to law, have been filed in my office by said corporation, and that all taxes, fees and charges payable upon the filing of said Articles of Amendment have been paid.

Received
Office of Oil & Gas
FEB 08 2016



SECRETARY OF STATE

Given under my hand and seal of Office as Secretary of State,
at Frankfort, Kentucky, this 15TH
day of AUGUST, 19 85.

Drexell R. Davis
SECRETARY OF STATE

ASSISTANT SECRETARY OF STATE

04/01/2016

LATITUDE 39°20'00"

6,094'

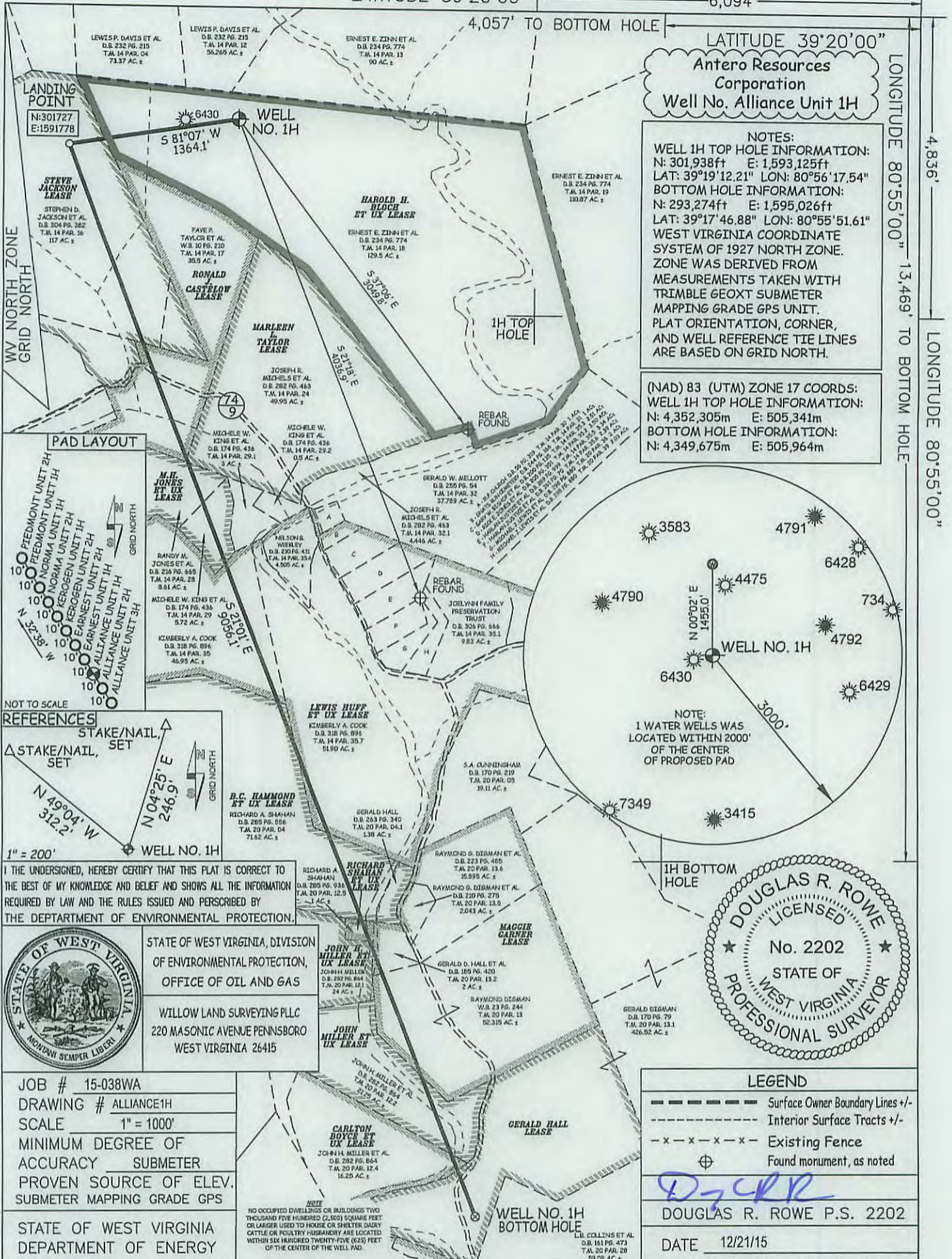
4,057' TO BOTTOM HOLE

LATITUDE 39°20'00"

Antero Resources Corporation
Well No. Alliance Unit 1H

NOTES:
 WELL 1H TOP HOLE INFORMATION:
 N: 301,938ft E: 1,593,125ft
 LAT: 39°19'12.21" LON: 80°56'17.54"
 BOTTOM HOLE INFORMATION:
 N: 293,274ft E: 1,595,026ft
 LAT: 39°17'46.88" LON: 80°55'51.61"
 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 1H TOP HOLE INFORMATION:
 N: 4,352,305m E: 505,341m
 BOTTOM HOLE INFORMATION:
 N: 4,349,675m E: 505,964m



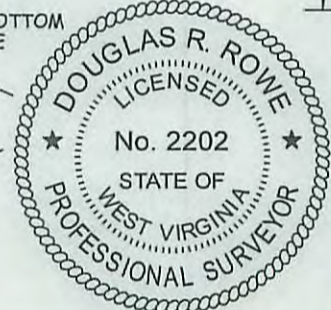
LONGITUDE 80°55'00" 13,469' TO BOTTOM HOLE

LONGITUDE 80°55'00" 4,836'

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 AVENUE PENNSBORO WEST VIRGINIA 26415



JOB # 15-038WA
 DRAWING # ALLIANCE1H
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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.

LEGEND	
---	Surface Owner Boundary Lines +/-
----	Interior Surface Tracts +/-
-x-x-x-x-	Existing Fence
⊕	Found monument, as noted
DOUGLAS R. ROWE P.S. 2202	
DATE	12/21/15

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL API WELL # 47 - 085 - 10274MOD

(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION ORIG 1,135' - PROPOSED 1,119' WATERSHED NORTH FORK HUGHES RIVER STATE COUNTY PERMIT QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER ERNEST E. ZINN ET AL ACREAGE 129.5 ACRES +/-

OIL & GAS ROYALTY OWNER HAROLD H. BLOCH ET UX; STEVE JACKSON; RONALD J. CASTELLO; MARLEEN J. TAYLOR; LEASE ACREAGE 131.5 AC.; 117 AC.; 35.5 AC.; 50 AC.; M.H. JONES ET UX; LEWIS HUFF ET UX; B.C. HAMMOND ET UX; RICHARD A. SHAHAN ET UX; JOHN H. MILLER ET UX; MAGGIE GARNER; JOHN MILLER ET UX; CARLTON BOYCE ET UX; GERALD HALL 200 AC.; 184 AC.; 73 AC.; 1 AC.; 24 AC.; 72.5 AC.; 21.25 AC.; 20 AC.; 65 AC.

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 ESTIMATED DEPTH 6,700' TVD 17,000' MD

TARGET FORMATION MARCELLUS

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER

ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD

DENVER, CO 80202 CHARLESTON, WV 25313

04/01/2016

LATITUDE 39°20'00"

6,094'

4,057' TO BOTTOM HOLE

LATITUDE 39°20'00"

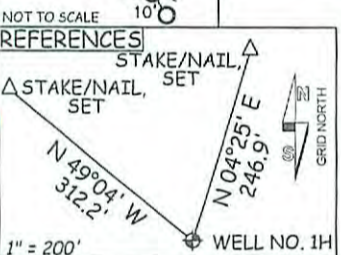
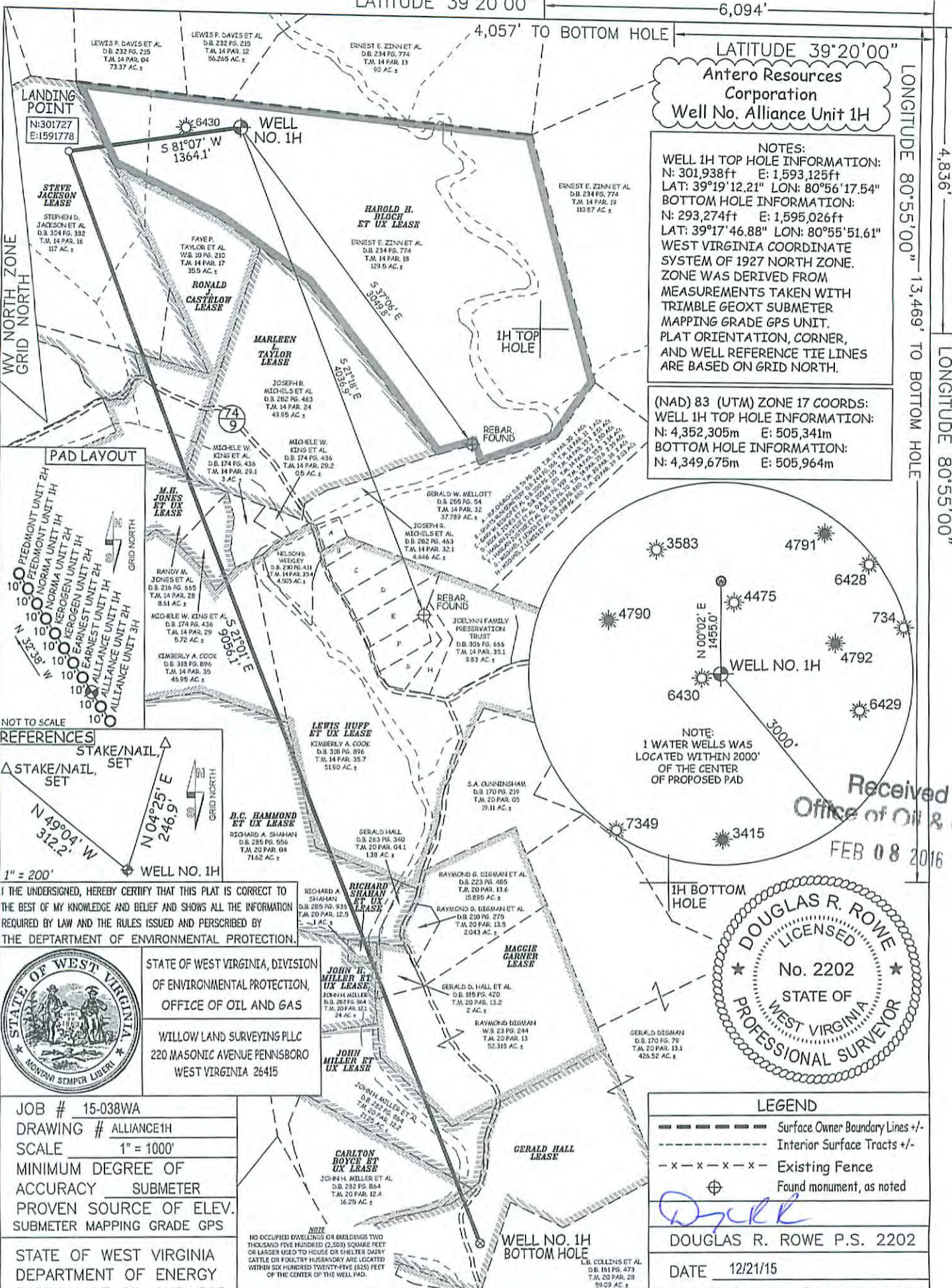
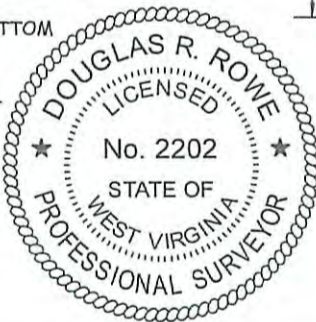
Antero Resources Corporation Well No. Alliance Unit 1H

NOTES: WELL 1H TOP HOLE INFORMATION: N: 301,938ft E: 1,593,125ft LAT: 39°19'12.21" LON: 80°56'17.54" BOTTOM HOLE INFORMATION: N: 293,274ft E: 1,595,026ft LAT: 39°17'46.88" LON: 80°55'51.61" 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 1H TOP HOLE INFORMATION: N: 4,352,305m E: 505,341m BOTTOM HOLE INFORMATION: N: 4,349,675m E: 505,964m

NOTE: 1 WATER WELLS WAS LOCATED WITHIN 2000' OF THE CENTER OF PROPOSED PAD

Received Office of Oil & Gas FEB 08 2016



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. WILLLOW LAND SURVEYING PLLC 220 MASONIC AVENUE PENNSBORO WEST VIRGINIA 26415

JOB # 15-038WA DRAWING # ALLIANCE1H SCALE 1" = 1000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND table with symbols for Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Existing Fence, and Found monument, as noted.

DOUGLAS R. ROWE P.S. 2202 DATE 12/21/15

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS. WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL. (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X. LOCATION: ELEVATION ORIG 1,135' - PROPOSED 1,119' WATERSHED NORTH FORK HUGHES RIVER STATE COUNTY PERMIT QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE. SURFACE OWNER ERNEST E. ZINN ET AL ACREAGE 129.5 ACRES +/- OIL & GAS ROYALTY OWNER HAROLD H. BLOCH ET UX; STEVE JACKSON; RONALD J. CASTELOW; MARLEEN J. TAYLOR; LEASE ACREAGE 131.5 AC±; 117 AC±; 35.5 AC±; 50 AC±; M.H. JONES ET UX; LEWIS HUFF ET UX; B.C. HAMMOND ET UX; RICHARD SHAHAN ET UX; JOHN H. MILLER ET UX; MAGGIE GARNER; JOHN MILLER ET UX; CARLTON BOYCE ET UX; GERALD HALL 200 AC±; 164 AC±; 73 AC±; 1 AC±; 24 AC±; 72.5 AC±; 21.25 AC±; 201 AC±; 11.5 AC±. PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X. OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD BHL. PLUG & ABANDON CLEAN OUT & REPLUG ESTIMATED DEPTH 6,700' TVD 17,000' MD. TARGET FORMATION MARCELLUS. WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM. ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

04/01/2016



February 4, 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 modifications for four approved wells on the approved Zinn Pad. We are requesting to extend the horizontal laterals which will change the BHLs of the Alliance Unit 1H (API# 47-085-10274), Alliance Unit 2H (API# 47-0 85-10275), Earnest Unit 1H (API# 47-085-10273), and Earnest Unit 2H (API# 47-085-10276). Please note that the new bottom hole locations will be drilling through new leases, and a revised Form WW-6A1 has been included.

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the updated BHLs and Measured Depths
- REVISED Form WW-6A1, which shows the new leases being drilled through
- REVISED Mylar Plat, which shows the new Lateral Lengths and Estimated Measured Depths

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Ashlie Steele".

Ashlie Steele
Permitting Supervisor
Antero Resources Corporation

Enclosures

Received
Office of Oil & Gas
FEB 08 2016

04/01/2016