



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

January 25, 2016

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for API Number 1706427, Well #: MICHELLE UNIT 2H

Extend 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.

01/29/2016



December 22, 2015

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

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

Ms. Adkins:

Antero Resources Corporation (Antero) would like to submit the following permit modification for one approved well on the existing Misery Pad. We are requesting to extend the lateral length and associated Estimated Measured Depth for the Michelle Unit 2H (API# 47-017-06427).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the updated BHL and Measured Depth
- REVISED Mylar Plat, which shows the new Lateral Length and Estimated Measured Depth
- REVISED Form WW-6A1, which shows the new leases we will be drilling

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 blue ink that reads "Ashlie Steele".

Ashlie Steele
Permitting Supervisor
Antero Resources Corporation

4701706427 MOD

Enclosures

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Office of Oil and Gas
JAN 21 2016
WV Department of
Environmental Protection

01/29/2016

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

1) Well Operator: Antero Resources Corporation 494488557 017 -Doddridge Grant Smithburg 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Michelle Unit 2H Well Pad Name: Misery Pad

3) Farm Name/Surface Owner: Denzil C. Spencer, et al Public Road Access: CR 24

4) Elevation, current ground: 1001' Elevation, proposed post-construction: 1001'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7100' TVD, Anticipated Thickness- 55 Feet, Associated Pressure- 2950#

8) Proposed Total Vertical Depth: 7100' TVD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 19800' MD

11) Proposed Horizontal Leg Length: 12163'

12) Approximate Fresh Water Strata Depths: 475'

13) Method to Determine Fresh Water Depths: Deano Unit 2H (API# 47-017-06498) on same pad.

14) Approximate Saltwater Depths: 1477', 1675'

15) Approximate Coal Seam Depths: None Identified

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

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

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

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18)

CASING AND TUBING PROGRAM

TYPE	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#	553'	553' *See #19	CTS, 768 Cu. Ft
Coal	9-5/8"	New	J-55	36#	2511'	2511'	CTS, 1022 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	19800'	19800'	5034 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-HPOZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

4701706427 MOD

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

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

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

*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."

Anticipated Max Pressure - 9300 lbs
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 18.62 existing acres

22) Area to be disturbed for well pad only, less access road (acres): 5.76 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

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.

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
Arthur Doak et ux Lease			
Arthur R. Doak et ux	CNG Producing Company	1/8	0129/0626
CNG Producing Company	CNG Development Co.	Assignment	0132/0564
CNG Development Co.	CNX	Assignment	DB 0293/0252
CNX	Antero Resources Appalachian Corporation	Assignment	0260/0125
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Wilmer G. Knight et al Lease			
Wilmer G. Knight et ux	Allegheny Land & Mineral Company	1/8	0068/0183
Allegheny Land & Mineral Company	National Producers Inc	Assignment	0084/0074
National Producers Inc	Jack E. Webber et ux	Assignment	0089/0494
Jack E. Webber et ux	Jeffrey Webber et ux	Assignment	0093/0388
Jeffrey Webber et ux	Aries Petroleum Corp.	Assignment	0122/0250
Aries Petroleum Corp.	Chesterfield Energy Corp	Assignment	0134/0748
Chesterfield Energy Corp	John Clevenger	Assignment	0160/0038
John Clevenger	Dominion Appalachian and Development LLC	Assignment	0176/0095
Dominion Appalachian Development LLC	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0230/0113
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Charles N. Costilow Lease			
Charles A. Costilow	Antero Resources Appalachian Corporation	1/8+	0288/0471
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Dominion Transmission Inc. Lease			
Dominion Transmission, Inc.	Dominion Exploration & Production, Inc.	1/8	0230/0138
Dominion Exploration & Production, Inc.	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0231/0145
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Kenneth R. Mason et ux Lease			
Kenneth R. Mason et ux	Drilling Appalachian Corporation	1/8	0181/0659
Drilling Appalachian Corporation	Antero Resources Appalachian Corporation	Assignment	0282/0407
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Frank Wilcox et ux Lease			
Frank Wilcox, Jr., et ux	Drilling Appalachian Corporation	1/8	0175/0458
Drilling Appalachian Corporation	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0262/0600
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Emory Kimball Lease			
Emory and Gladys Kimball	Drilling Appalachian Corporation	1/8	0156/0331
Drilling Appalachian Corporation	Dominion Exploration & Production, Inc.	Assignment	0243/0397
Dominion Exploration & Production, Inc.	CNX Gas Company LLC	Assignment	DB 0292/0469
CNX Gas Company LLC	Antero Resources Appalachian Corporation	Assignment	0260/0125
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

47-017-06427 MOD

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Office of Oil and Gas
JAN 21 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.

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Elizabeth Y. Burge Lease</u>			
Elizabeth Y. Burge Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0269/0299 Exhibit 1
<u>David E. Boyer Lease</u>			
David E. Boyer Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0400/0513 Exhibit 1
<u>S.A. Smith et al Lease</u>			
Union National Bank of WV T/U/A for S.A. Smith & Burke Morris Stonewall Gas Company Dominion Reserves, Inc.	Stonewall Gas Company Dominion Reserves, Inc. Consol Gas Reserves	1/8 Assignment Assignment	0292/0129 DB 0292/0004 Doddridge Co. DB 0286/0093
Consol Gas Reserves CNX Gas Company, LLC Noble Energy, Inc. Antero Resources Appalachian Corporation	CNX Gas Company, LLC Noble Energy, Inc. Antero Resources Appalachian Corporation Antero Resources Corporation	Assignment Assignment Assignment Name Change	0293/0252 0388/0286 0425/0725 Exhibit 1
<u>Gwendolyn Coffman Lease</u>			
Gwendolyn Coffman & L. Brooks Coffman Drilling Appalachian Corporation Antero Resources Appalachian Corporation	Drilling Appalachian Corporation Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Assignment Name Change	0276/0010 0401/0499 Exhibit 1
<u>William Ball Lease</u>			
William Ball	Antero Resources Corporation	1/8+	0463/0327
<u>Lamoyne Sweeney Lease</u>			
LaMoynne Sweeney Drilling Appalachian Corporation Dominion Appalachian Development, Inc. CONSOL Gas Appalachian Development, LLC CONSOL Gas Reserves, Inc. Consol Gas Company CNX Gas Company, LLC	Drilling Appalachian Corporation Dominion Appalachian Development, Inc. CONSOL Gas Appalachian Development, LLC CONSOL Gas Reserves, Inc. Consol Gas Company CNX Gas Company, LLC Antero Resources Corporation	1/8 Assignment Name Change Certificate of Merger Certificate of Merger Certificate of Merger Assignment	0288/0095 0322/0190 COI 0009/0124 COI 0009/0144 COI 0009/0156 COI 0009/0206 0425/0725

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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.

01/29/2016

CONTINUED ON NEXT PAGE

**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
<u>Anna Sweeney Lease</u>	Anna Sweeney	Four Leaf Land Company	1/8	0370/0635
	Four Leaf Land Company	Antero Resources Appalachian Corporation	Assignment	0403/0566
	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

4701706427 MOD

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

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

Office of Oil and Gas

JAN 21 2016

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WV Department of
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Page 1 of _____

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



Fennay Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvnet.com
E-mail: business@wvnet.com

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

Office Hours: Monday - Friday
8:30 a.m. - 5:00 p.m. ET

FILE ONE ORIGINAL
(Two if you want a filed
stamped copy returned to you)
FEE: \$25.00

**** In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby ****
applies for an Amended Certificate of Authority and submits the following statement:

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/25/2008
- 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.)
Alvyn A. Schopp (903) 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: [Handwritten Signature] Date: June 10, 2013

Important Legal Notice Regarding Signature For 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.

Form CF-4

Issued by the Office of the Secretary of State

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Office of Oil and Gas
Revised 4/03
JAN 21 2016

WV011 - 04/16/2011 Website: www.kanawha.com

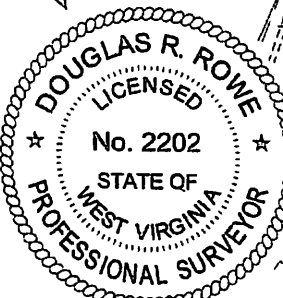
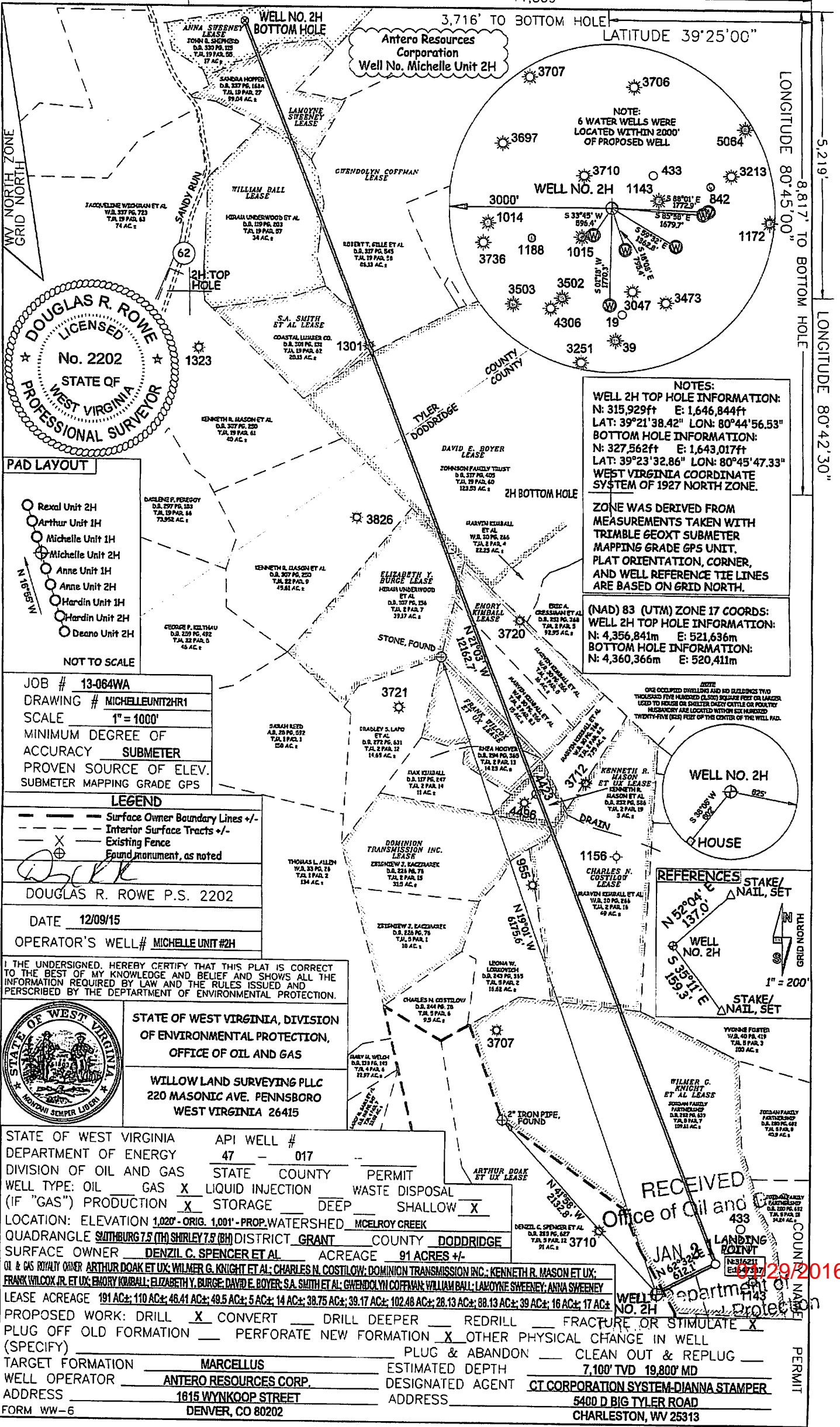
WV Department of
Environmental Protection

01/29/2016

4701706427 MOD

LATITUDE 39°22'30"

LATITUDE 39°25'00"



NOTES:
 WELL 2H TOP HOLE INFORMATION:
 N: 315,929ft E: 1,646,844ft
 LAT: 39°21'38.42" LON: 80°44'56.53"
 BOTTOM HOLE INFORMATION:
 N: 327,562ft E: 1,643,017ft
 LAT: 39°23'32.86" LON: 80°45'47.33"
 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 2H TOP HOLE INFORMATION:
 N: 4,356,841m E: 521,636m
 BOTTOM HOLE INFORMATION:
 N: 4,360,366m E: 520,411m

- PAD LAYOUT**
- Rehal Unit 2H
 - Arthur Unit 1H
 - Michelle Unit 1H
 - Michelle Unit 2H
 - Anne Unit 1H
 - Anne Unit 2H
 - Hardin Unit 1H
 - Hardin Unit 2H
 - Deano Unit 2H
- NOT TO SCALE

JOB # 13-064WA
 DRAWING # MICHELLEUNIT2HR1
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Existing Fence
- Found monument, as noted

DOUGLAS R. ROWE P.S. 2202
 DATE 12/09/15
 OPERATOR'S WELL # MICHELLE UNIT #2H

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

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

API WELL # 47 - 017
 STATE COUNTY PERMIT
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,020' - ORIG. 1,001' - PROP. WATERSHED MCELROY CREEK
 QUADRANGLE SMITHBURG 7.5 (TH) SHIRLEY 7.5 (BH) DISTRICT GRANT COUNTY DODDRIDGE
 SURFACE OWNER DENZIL C. SPENCER ET AL. ACREAGE 91 ACRES +/-
 OIL & GAS ROYALTY OWNER ARTHUR DOAK ET UX; WILMER G. KNIGHT ET AL.; CHARLES N. COSTLOW; DOMINION TRANSMISSION INC.; KENNETH R. MASON ET UX; FRANK WILCOX JR. ET UX; EMORY KIRBALL; ELIZABETH Y. BURGE; DAVID E. BOYER; S.A. SMITH ET AL.; GWENDOLYN COFFMAN; WILLIAM BALL; LAKOYNE SWEENEY; ANNA SWEENEY

LEASE ACREAGE 191 AC±; 110 AC±; 46.41 AC±; 49.5 AC±; 5 AC±; 14 AC±; 38.75 AC±; 39.17 AC±; 102.48 AC±; 28.13 AC±; 88.13 AC±; 39 AC±; 16 AC±; 17 AC±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,100' TVD 19,800' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D. BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

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 Office of Oil and Gas
 JAN 2 2016
 01/29/2016

LATITUDE 39°22'30"

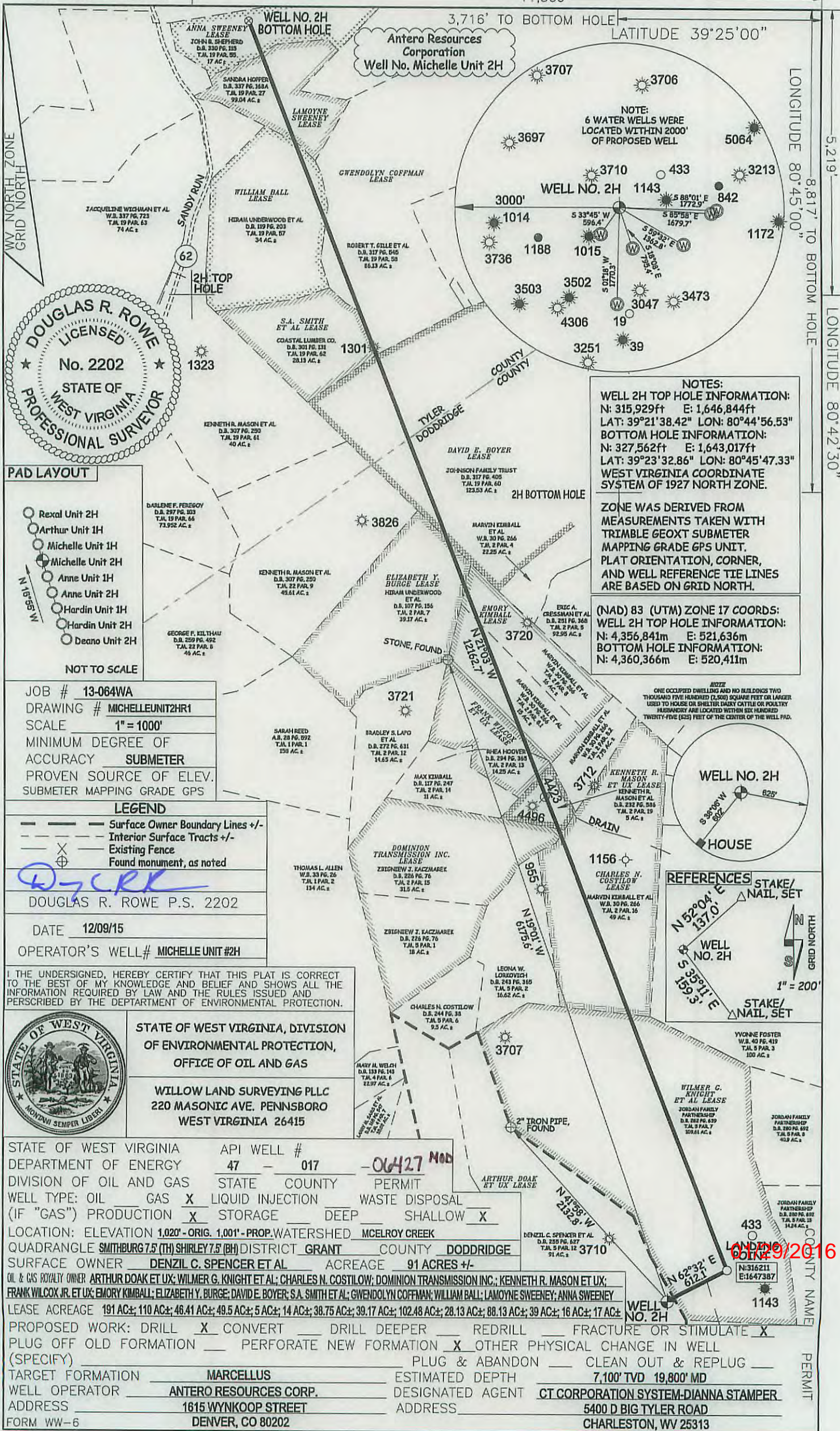
11,509'

LATITUDE 39°25'00"

LONGITUDE 80°45'00"

5,219'

LONGITUDE 80°42'30"



Antero Resources Corporation
Well No. Michelle Unit 2H

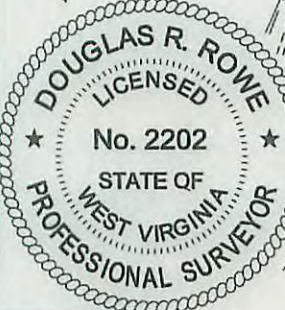
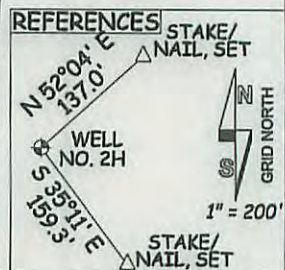
NOTE:
6 WATER WELLS WERE
LOCATED WITHIN 2000'
OF PROPOSED WELL

WELL 2H TOP HOLE INFORMATION:
N: 315,929ft E: 1,646,844ft
LAT: 39°21'38.42" LON: 80°44'56.53"
BOTTOM HOLE INFORMATION:
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SYSTEM OF 1927 NORTH ZONE.

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WELL 2H TOP HOLE INFORMATION:
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BOTTOM HOLE INFORMATION:
N: 4,360,366m E: 520,411m

NOTE
ONE OCCUPIED DWELLINGS AND NO BUILDINGS TWO
THOUSAND FIVE HUNDRED (2,000) 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.



JOB # 13-064WA
DRAWING # MICHELLEUNIT2HR1
SCALE 1" = 1000'
MINIMUM DEGREE OF
ACCURACY SUBMETER
PROVEN SOURCE OF ELEV.
SUBMETER MAPPING GRADE GPS

LEGEND
- - - Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
X Existing Fence
⊕ Found monument, as noted

DOUGLAS R. ROWE P.S. 2202
DATE 12/09/15
OPERATOR'S WELL# MICHELLE UNIT #2H

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

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

API WELL # 47 - 017 - 06427 MOD

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

LOCATION: ELEVATION 1,020' - ORIG. 1,001' - PROP. WATERSHED MCELROY CREEK

QUADRANGLE SMITHBURG 7.5 (TH) SHIRLEY 7.5 (BH) DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER DENZIL C. SPENCER ET AL ACREAGE 91 ACRES +/-

OIL & GAS ROYALTY OWNER ARTHUR DOAK ET UX; WILMER G. KNIGHT ET AL; CHARLES N. COSTILOW; DOMINION TRANSMISSION INC.; KENNETH R. MASON ET UX;
FRANK WILCOX JR. ET UX; EMORY KIMBALL; ELIZABETH Y. BURGE; DAVID E. BOYER; S.A. SMITH ET AL; GWENDOLYN COFFMAN; WILLIAM BALL; LAMOYNE SWEENEY; ANNA SWEENEY

LEASE ACREAGE 191 AC±; 110 AC±; 46.41 AC±; 49.5 AC±; 5 AC±; 14 AC±; 38.75 AC±; 39.17 AC±; 102.48 AC±; 28.13 AC±; 88.13 AC±; 39 AC±; 16 AC±; 17 AC±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,100' TVD 19,800' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

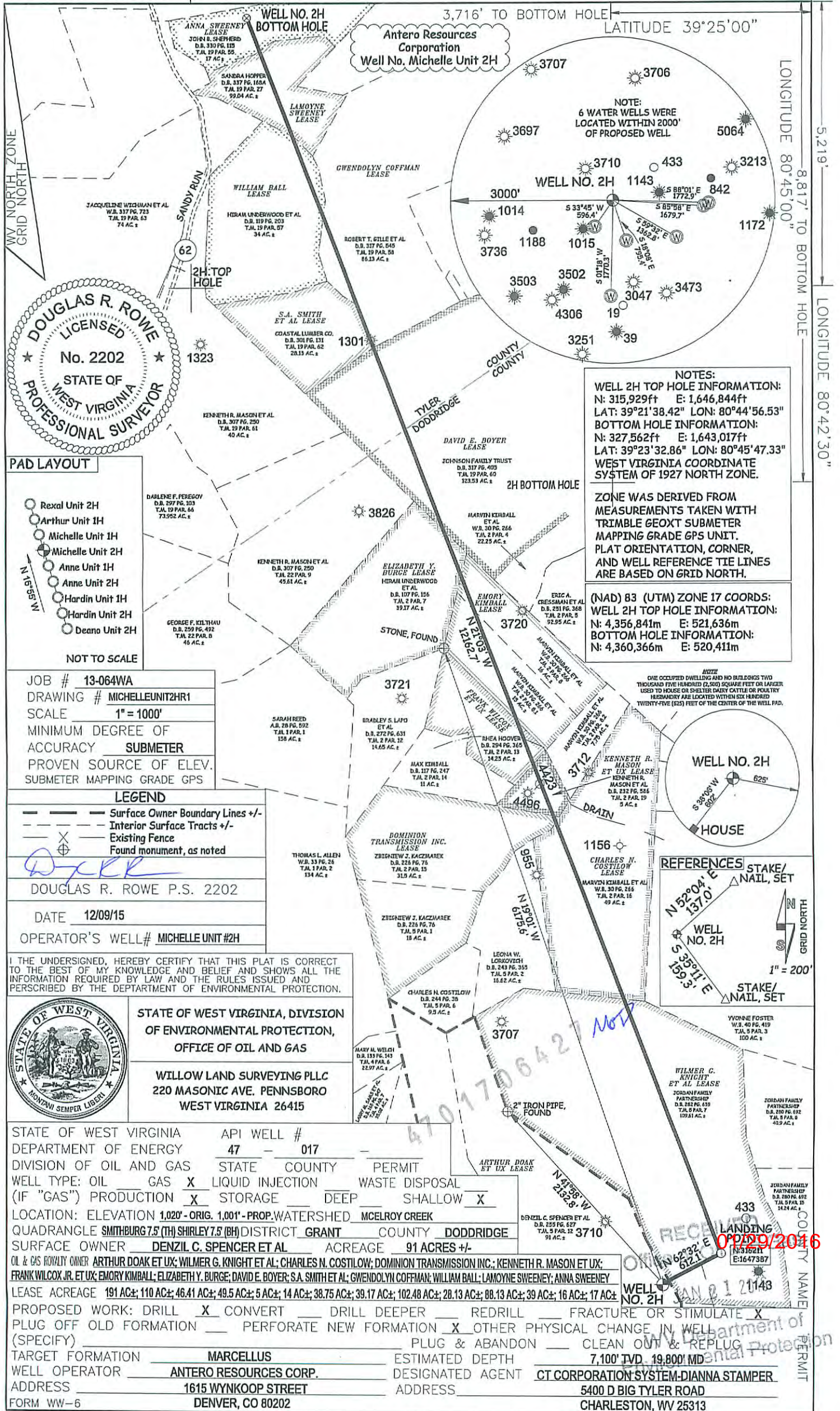
DATE 12/9/2016

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E: 1647387

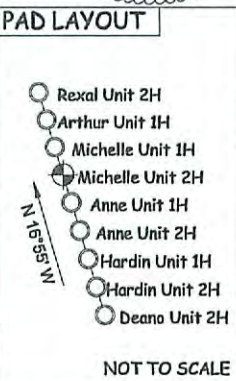
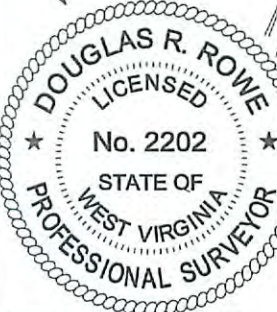
LATITUDE 39°22'30"

11,509'

LATITUDE 39°25'00"



LONGITUDE 80°45'00"
 8,817' TO BOTTOM HOLE
 LONGITUDE 80°42'30"



NOTES:

WELL 2H TOP HOLE INFORMATION:
 N: 315,929ft E: 1,646,844ft
 LAT: 39°21'38.42" LON: 80°44'56.53"

BOTTOM HOLE INFORMATION:
 N: 327,562ft E: 1,643,017ft
 LAT: 39°23'32.86" LON: 80°45'47.33"

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 2H TOP HOLE INFORMATION:
 N: 4,356,841m E: 521,636m
 BOTTOM HOLE INFORMATION:
 N: 4,360,366m E: 520,411m

JOB # 13-064WA
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 SCALE 1" = 1000'
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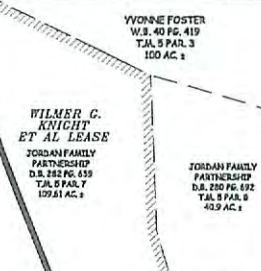
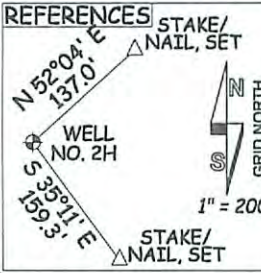
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FORM WW-6 DENVER, CO 80202



RECEIVED
 01/29/2016
 DEPARTMENT OF ENVIRONMENTAL PROTECTION