



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, July 17, 2019
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for RODZINA UNIT 2H
47-095-02586-00-00

Extend 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 typed name and title.

Operator's Well Number: RODZINA UNIT 2H
Farm Name: GARY D. DAWSON ET UX
U.S. WELL NUMBER: 47-095-02586-00-00
Horizontal 6A New Drill
Date Modification Issued: July 17, 2019

Promoting a healthy environment.

WW-6B
(04/15)

API NO. 47-095 - 02586
OPERATOR WELL NO. Rodzina Unit 2H
Well Pad Name: Dawson Pad

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

1) Well Operator: Antero Resources Corpora 494507062 095 - Tyler Centerville Shirley 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Rodzina Unit 2H Well Pad Name: Dawson Pad

3) Farm Name/Surface Owner: Gary D. Dawson Public Road Access: State Route 18

4) Elevation, current ground: 1009' Elevation, proposed post-construction: _____

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: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23200' MD

11) Proposed Horizontal Leg Length: 13544'

12) Approximate Fresh Water Strata Depths: 115', 320', 455'

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

14) Approximate Saltwater Depths: 551', 1583', 1830'

15) Approximate Coal Seam Depths: 275', 424', 975'

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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Environmental Protection

WW-6B
(04/15)

API NO. 47- 095 - 02586

OPERATOR WELL NO. Rodzina Unit 2H

Well Pad Name: Dawson Pad

18)

CASING AND TUBING PROGRAM

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	H-40	94#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	505 *see # 19	505 *see # 19	CTS, 702 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	23200	23200	5971 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	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"	0.415"	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			
Depths Set:	N/A			

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WW-6B
(10/14)

API NO. 47- 095 - 02586
OPERATOR WELL NO. Rodzina Unit 2H
Well Pad Name: Dawson 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): Existing 28.65 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 9.14 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

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.

WW-6A1

Operator's Well Number Rodzina 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
<u>Gary D. Dawson et ux Lease</u>			
Gary D. Dawson et ux	Antero Resources Corporation	1/8+	0459/0133
<u>Coastal Forest Resources Co. Lease (TM 15 P 28)</u>			
Coastal Forest Resources Co.	Noble Energy Inc	1/8+	0534/0250
Noble Energy Inc	CNX Gas Co. LLC	Assignment	0549/0523
CNX Gas Co. LLC	Antero Resources Corporation	Assignment	0564/0704
<u>Ralph J. Underwood et ux Lease</u>			
Ralph J. Underwood et ux	Chesterfield Energy Corporation	1/8	0267/0168
Chesterfield Energy Corporation	Dominion Appalachian Development Properties	Assignment	0312/0505
Dominion Appalachian Development Properties	Consol Gas Appalachian Development	Name Change	0009/0124
Consol Gas Appalachian Development	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Name Change	0009/0206
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<u>Coastal Forest Resources Co. Lease (TM 15 P 31)</u>			
Coastal Forest Resources Co.	Noble Energy Inc	1/8+	0534/0250
Noble Energy Inc	CNX Gas Co. LLC	Assignment	0549/0523
CNX Gas Co. LLC	Antero Resources Corporation	Assignment	0564/0704
<u>Ann R. Martinelli et vir Lease</u>			
Ann R. Martinelli et vir	Noble Energy Inc	1/8	0541/0484
Noble Energy Inc	CNX Gas Company LLC	Assignment	0550/0273
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<u>Clarence Hadley et ux Lease (TM 15 PCL 12)</u>			
Clarence Hadley et ux	Jack Burg	1/8+	0264/0637
Jack Burg	Anvil Oil Company Inc	Agreement	0265/0055
Anvil Oil Company Inc	Anvil Oil & Gas Company Inc	Name Change	WVSOS
Anvil Oil & Gas Company Inc	Dominio Appalachian Development Inc	Assignment	0232/0383
Dominio Appalachian Development Inc	Dominio Appalachian Development LLC	Name Change	WVSOS
Dominio Appalachian Development LLC	Consol Gas Appalachian Development LLC	Name Change	0009/0131
Consol Gas Appalachian Development LLC	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Merger	0009/0206
CNX Gas Company LLC	Noble Energy Inc	Assignment	0388/0286
Noble Energy Inc	CNX Gas Company LLC	Assignment	0550/0273
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386

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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.

CONTINUED ON NEXT PAGE

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Clarence Hadley et ux Lease (TM 15 PCL 14.1)</u>			
Clarence Hadley et ux	Jack Burg	1/8+	0264/0637
Jack Burg	Anvil Oil Company Inc	Agreement	0265/0055
Anvil Oil Company Inc	Anvil Oil & Gas Company Inc	Name Change	WVSOS
Anvil Oil & Gas Company Inc	Dominio Appalachian Development Inc	Assignment	0232/0383
Dominio Appalachian Development Inc	Dominion Appalachian Development LLC	Name Change	WVSOS
Dominion Appalachian Development LLC	Consol Gas Appalachian Development LLC	Name Change	0009/0131
Consol Gas Appalachian Development LLC	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Merger	0009/0206
CNX Gas Company LLC	Noble Energy Inc	Assignment	0388/0286
Noble Energy Inc	CNX Gas Company LLC	Assignment	0550/0273
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<u>Vada Sue Kissner Lease</u>			
Vada Sue Kissner	Antero Resources Corporation	1/8+	0446/0269
Antero Resources Corporation	CNX Gas Company LLC	Assignment	0503/0724
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<u>Emerson Laurence Moore et ux Lease</u>			
Emerson Laurence Moore et ux	Royal Resources Corporation	1/8+	0190/0478
Royal Resources Corporation	Columbia Gas Transmission Corporation	Assignment	0191/0235
Columbia Gas Transmission Corporation	Anvil Oil Company Inc	Assignment	0265/0112
Anvil Oil Company Inc	Dominio Appalachian Development Inc	Assignment	0323/0383
Dominio Appalachian Development Inc	Dominion Appalachian Development LLC	Name Change	WVSOS
Dominion Appalachian Development LLC	Consol Gas Appalachian Development	Name Change	0009/0131
Consol Gas Appalachian Development	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company	Name Change	0009/0206
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<u>Joseph E. Michael et ux Lease</u>			
Joseph E. Michael et ux	Antero Resources Corporation	1/8	0557/0292
Antero Resources Corporation	CNX Gas Company LLC	Assignment	0503/0738
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386

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****CONTINUED ON NEXT PAGE****

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Violet Gregg et al Lease</u>			
Violet Gregg et al	James F. Doan	1/8	0254/0245
James F. Doan	Anvil Oil Company Inc	Assignment	0254/0245
Anvil Oil Company Inc	Anvil Oil & Gas Company	Name Change	0254/0245
Anvil Oil & Gas Company	Dominion Appalachian Development	Assignment	0323/0383
Dominion Appalachian Development	Consol Gas Appalachian Development	Name Change	0009/0131
Consol Gas Appalachian Development	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Name Change	0009/0206
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<u>Roy A. Meredith et ux Lease</u>			
Roy A. Meredith et ux	J&J Enterprises Inc	1/8	0257/0527
J&J Enterprises Inc	Eastern American Energy Corporation	Assignment	0282/0296
Eastern American Energy Corporation	Energy Corporation of America	Certificate of Merger	0009/0093
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0398/0416
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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WW-6A1
(5/13)

Operator's Well No. Rodzina Unit 2H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>O.W. Griffin et ux Lease</u>				
	O.W. Griffin et ux	R.W. Keener	1/8+	0196/0234
	R.W. Keener	Columbia Gas Transmission Corporation	Assignment	0196/0163
	Columbia Gas Transmission Corporation	Columbia Natural Resources, Inc.	Assignment	0286/0603
	Columbia Natural Resources, Inc.	Columbia Natural Resources LLC	Name Change	0009/0001
	Columbia Natural Resources LLC	Chesapeake Appalachia LLC	Merger	0349/0536
	Chesapeake Appalachia LLC	SWN Production Company	Assignment	0465/0463
	SWN Production Company	Antero Exchange Properties	Assignment	0544/0242
	Antero Exchange Properties	Antero Resources Corporation	Merger	0552/0315

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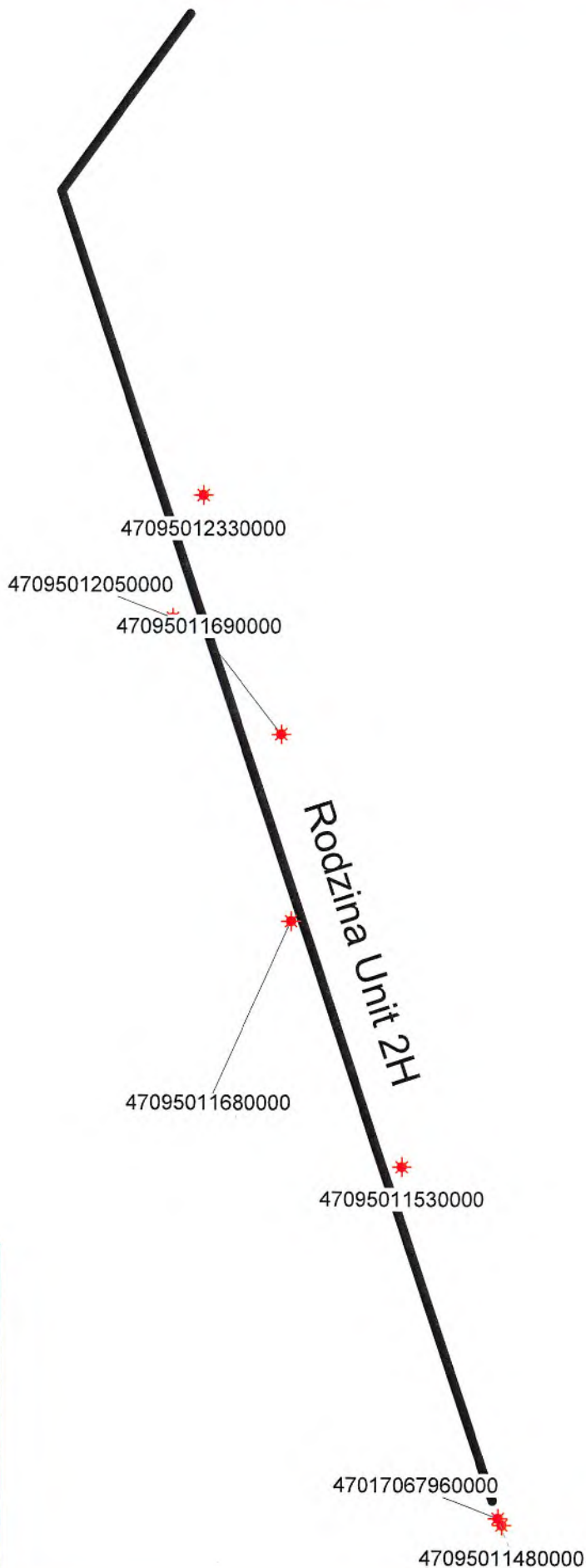
**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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 RECEIVED
Office of Oil and Gas
 By: Kevin Kilstrom
 Its: Senior Vice President - Production 08 2019



Antero Resources Corporation

Rodzina Unit 2H - AOR



WELL SYMBOLS
Gas Well

November 27, 2018

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UWI (APINum)	Well Name	Well Number	Operator	Hist Oper	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47095012330000	HADLEY RUBY	2	CONSOL GAS COMPANY	ANVIL OIL COMPANY	5,135	4623 - 5028	Riley, Benson	Big Injun, Weir, Alexander
47095012050000	HADLEY CLARENCE	1	CONSOL GAS COMPANY	ANVIL OIL COMPANY	5,134	4529 - 4931	Riley, Benson	Big Injun, Weir, Alexander
47095011690000	MOORE MABEL B	2	CONSOL GAS COMPANY	ANVIL OIL COMPANY	5,050	4511 - 4929	Riley, Benson	Big Injun, Weir, Alexander
47095011680000	MOORE MABEL B	1	CONSOL GAS COMPANY	ANVIL OIL COMPANY	5,083	4552 - 4953	Riley, Benson	Big Injun, Weir, Alexander
47095011530000	GREGG MILDRED ET AL	1	CONSOL GAS COMPANY	COASTAL CORP THE	5,145	4566 - 4939	Riley, Benson	Big Injun, Weir, Alexander
47017067960000	CALIFORNIA UNIT	1H	Antero Resources Corporation		21,348	6975 - 21256	Marcellus	Big Injun, Weir, Alexander
47095011480000	GLASURE DAVID W	J-1265	ENERGY CORP OF AMER	J & J ENTERPRISES	5,547	4557 - 4966	Riley, Benson	Big Injun, Weir, Alexander

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LATITUDE 39°25'00"

11,247'

8,471' TO BOTTOM HOLE

LATITUDE 39°22'30"

LONGITUDE 80°50'00"

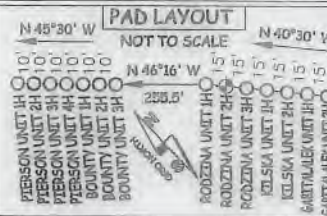
13,287'

LONGITUDE 80°50'00"

Antero Resources Corporation Well No. Rodzina Unit 2H

NOTES: WELL 2H TOP HOLE INFORMATION: N: 323,548ft E: 1,611,871ft LAT: 39°22'48.67" LON: 80°52'23.23" BOTTOM HOLE INFORMATION: N: 309,002ft E: 1,614,431ft LAT: 39°20'25.30" LON: 80°51'47.83" 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: 4,358,984m E: 510,942m BOTTOM HOLE INFORMATION: N: 4,354,566m E: 511,796m



3 WATER WELLS WERE LOCATED WITHIN 200' OF CENTER OF PAD

WELL NO. 2H

2H TOP HOLE

2H BOTTOM HOLE

WELL 2H BOTTOM HOLE

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

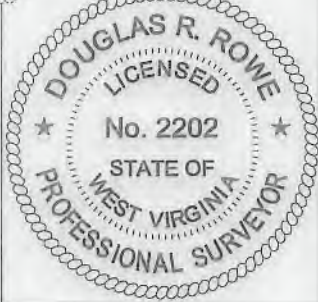
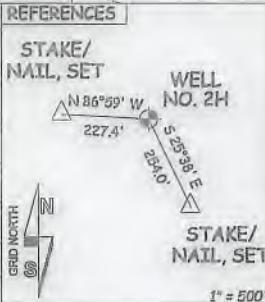
WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

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.

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,300,387ft E: 1,676,269ft POINT OF ENTRY INFORMATION: N: 14,298,748ft E: 1,674,828ft BOTTOM HOLE INFORMATION: N: 14,285,891ft E: 1,679,071ft

JOB # 18-030WA DRAWING # RODZINA2HR2 SCALE 1" = 2000' 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



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

DATE 4/10/19 OPERATOR'S WELL# RODZINA UNIT #2H

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,009' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE SHIRLEY 7.5' (TH) WEST UNION 7.5' (BH) DISTRICT CENTERTVILLE COUNTY TYLER SURFACE OWNER GARY D. DAWSON ET UX ACREAGE 104.27 ACRES +/- OIL & GAS ROYALTY OWNER GARY D. DAWSON ET UX; COASTAL FOREST RESOURCES CO.; RALPH J. UNDERWOOD; LEASE ACREAGE 104.27 AC +/-; 108 AC +/-; 76 AC +/-; COASTAL FOREST RESOURCES CO.; ANN MARTINELLI ET VIR; CLARENCE HADLEY ET UX; CLARENCE HADLEY ET UX; VADA SUE KISSNER; 32 AC +/-; 25 AC +/-; 176 AC +/-; 31.2 AC +/-; 32 AC +/-; EMERSON LAURENCE MOORE ET UX; JOSEPH E. MICHAEL ET UX; VIOLET GREGG ET AL; ROY A. MEREDITH ET UX; O.W. GRIFFIN ET UX 168 AC +/-; 125 AC +/-; 40 AC +/-; 80 AC +/-; 220 AC +/- PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,900' TVD 23,200' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD DENVER, CO 80202 CHARLESTON, WV 25313

LATITUDE 39°25'00"

11,247'

8,471' TO BOTTOM HOLE

LATITUDE 39°22'30"

LONGITUDE 80°50'00"

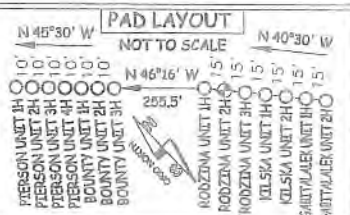
13,287'

LONGITUDE 80°50'00"

Antero Resources Corporation Well No. Rodzina Unit 2H

NOTES: WELL 2H TOP HOLE INFORMATION: N: 323,548ft E: 1,611,871ft LAT: 39°22'48.67" LON: 80°52'23.23" BOTTOM HOLE INFORMATION: N: 309,002ft E: 1,614,431ft LAT: 39°20'25.30" LON: 80°51'47.83" 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: 4,358,984m E: 510,942m BOTTOM HOLE INFORMATION: N: 4,354,566m E: 511,796m



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

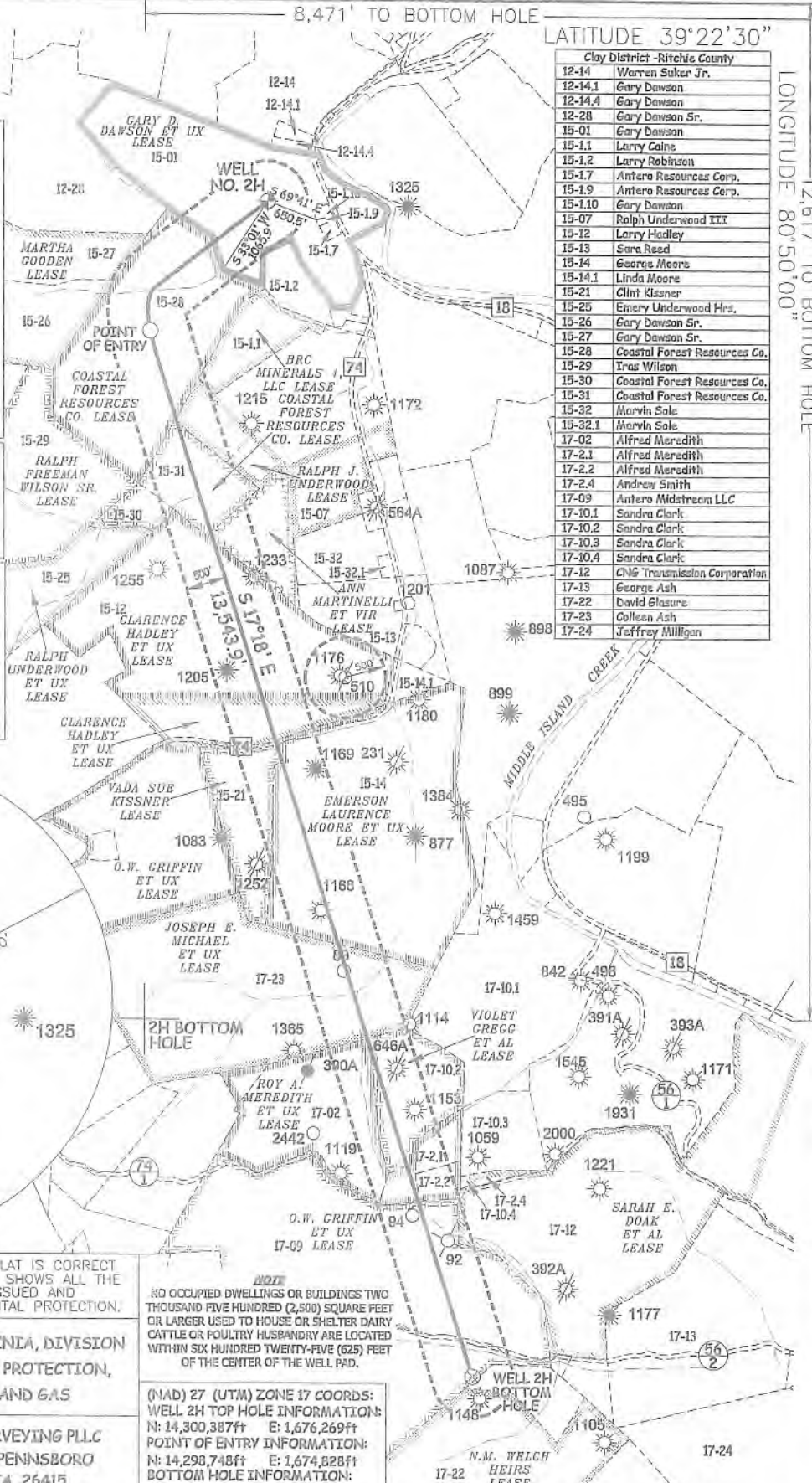


Table listing lease owners and well numbers. Includes names like Warren Sulzer Jr., Gary Dawson, Antero Resources Corp., and well numbers like 12-14, 15-01, 15-11, etc.

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

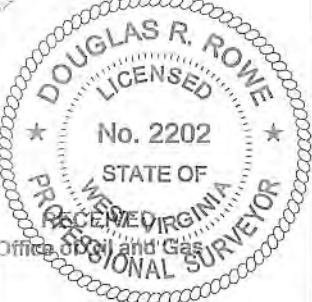
WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

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.

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,300,387ft E: 1,676,269ft POINT OF ENTRY INFORMATION: N: 14,298,748ft E: 1,674,828ft BOTTOM HOLE INFORMATION: N: 14,285,891ft E: 1,679,071ft

JOB # 18-030WA DRAWING # RODZINA2HR2 SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND: Surface Owner Boundary Lines +/- Interior Surface Tracts +/- Existing Fence Found monument, as noted DOUGLAS R. ROWE P.S. 2202 DATE 4/10/19 OPERATOR'S WELL# RODZINA UNIT #2H



Form containing well details: WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 - JUL 08 2019 02586 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,009' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE SHIRLEY 7.5' (TH) WEST UNION 7.5' (BH) DISTRICT CENTERVILLE COUNTY PUTNER SURFACE OWNER GARY D. DAWSON ET UX ACREAGE 104.27 ACRES +/- OIL & GAS ROYALTY OWNER GARY D. DAWSON ET UX; COASTAL FOREST RESOURCES CO.; RALPH J. UNDERWOOD; LEASE ACREAGE 104.27 AC +/-; 108 AC +/-; 76 AC +/-; COASTAL FOREST RESOURCES CO.; ANN MARTINELLI ET VIR; CLARENCE HADLEY ET UX; CLARENCE HADLEY ET UX; VADA SUE KISSNER; 32 AC +/-; 25 AC +/-; 176 AC +/-; 31.2 AC +/-; 32 AC +/-; EMERSON LAURENCE MOORE ET UX; JOSEPH E. MICHAEL ET UX; VIOLET GREGG ET AL; ROY A. MEREDITH ET UX; O.W. GRIFFIN ET UX 168 AC +/-; 125 AC +/-; 40 AC +/-; 80 AC +/-; 220 AC +/- PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,900' TVD 23,200' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD DENVER, CO 80202 CHARLESTON, WV 25313