



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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Tuesday, June 8, 2021
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for WADE 2H
47-095-02728-00-00

Extend Lateral 4390' to 18859' updated lease chain.

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

Operator's Well Number: WADE 2H
Farm Name: ROGER D. BLIZZARD & RUTH E. SPENCER
U.S. WELL NUMBER: 47-095-02728-00-00
Horizontal 6A New Drill
Date Modification Issued: 06/08/2021

Promoting a healthy environment.

06/11/2021

WW-6B
(04/15)

API NO. 47-095 - 02728
OPERATOR WELL NO. Wade Unit 2H
Well Pad Name: Blizzard 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 Porters Falls 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Wade Unit 2H Well Pad Name: Blizzard Pad

3) Farm Name/Surface Owner: Roger D. Blizzard & Ruth E. Spencer Public Road Access: US Route 34

4) Elevation, current ground: 1004' 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

*DMH
6-7-21*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7000' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 27000'

11) Proposed Horizontal Leg Length: 18859'

12) Approximate Fresh Water Strata Depths: 16'

13) Method to Determine Fresh Water Depths: 47-095-02274

14) Approximate Saltwater Depths: 1430', 1813'

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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WV Department of
Environmental Protection
Page 1 of 1

06/11/2021

WW-6B
(04/15)

API NO. 47- 095 - 02728
 OPERATOR WELL NO. Wade Unit 2H
 Well Pad Name: Blizzard 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#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300	300	CTS, 417 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#	27000	27000	7016 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

DmH
6-4-21

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	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-HIPOZ & Tall-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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WV Department of Environmental Protection
Page 2 of 3

06/11/2021

WW-6B
(10/14)

API NO. 47- 095 - 02728
OPERATOR WELL NO. Wade Unit 2H
Well Pad Name: Blizzard Pad

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

Drill a new horizontal shallow well into the Marcellus Shale.

DmH
6-4-21

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 26.80 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 9.52 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

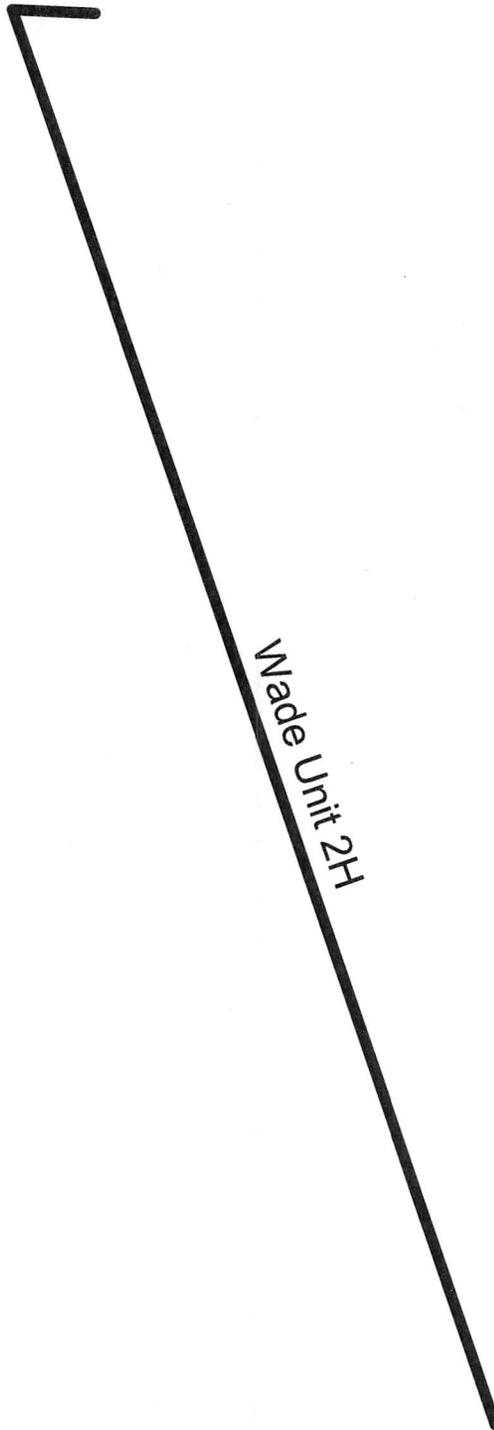
25) Proposed borehole conditioning procedures:

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*Note: Attach additional sheets as needed.

PERMIT MODIFICATION API # 47-095-02728



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MAY 28 2021
WV Department of
Environmental Protection



Antero Resources Corporation

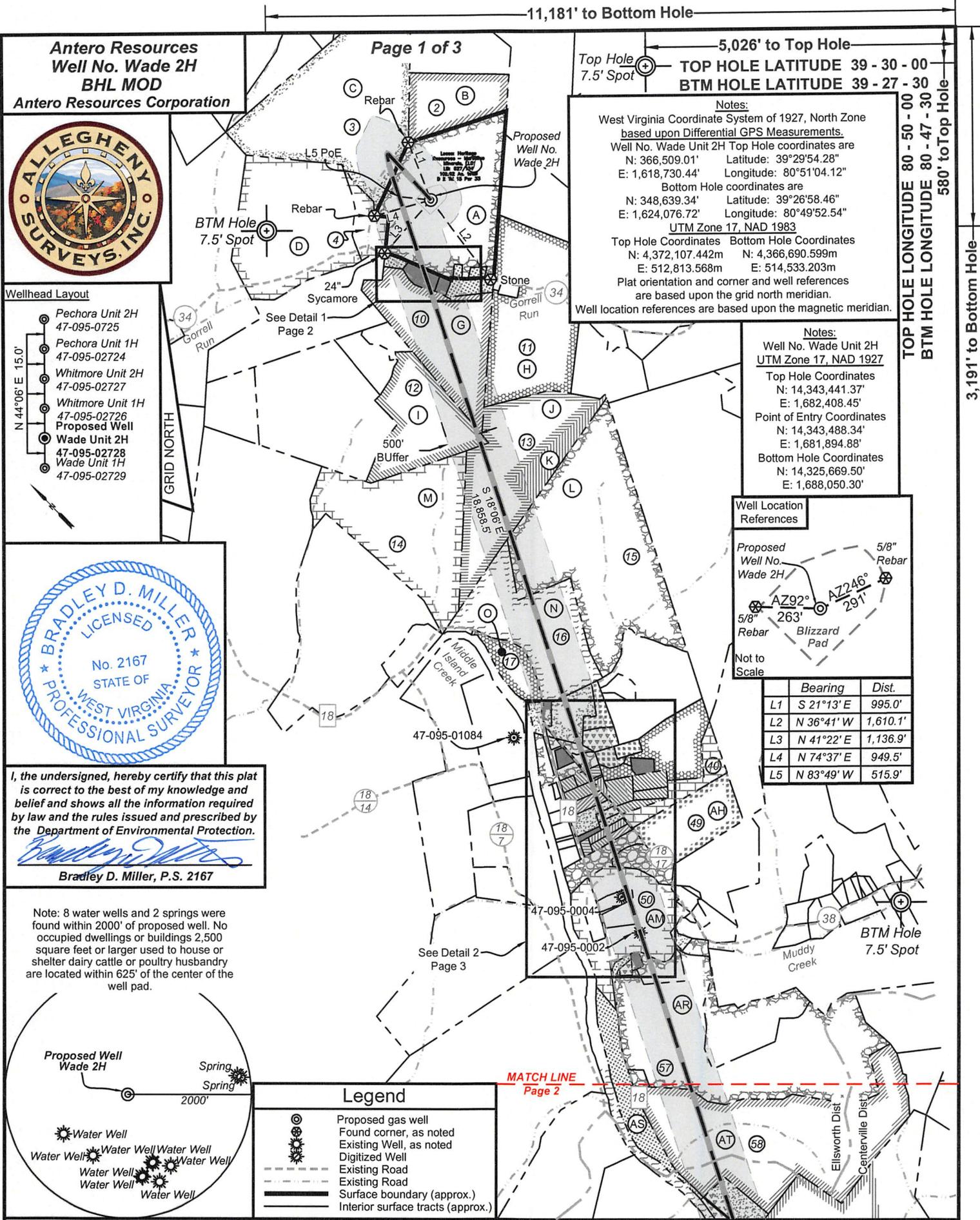
Wade Unit 2H - AOR



No Wells of Interest REMARKS

January 21, 2020

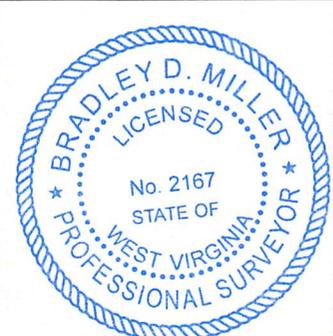
06/11/2021



Antero Resources
Well No. Wade 2H
BHL MOD
Antero Resources Corporation



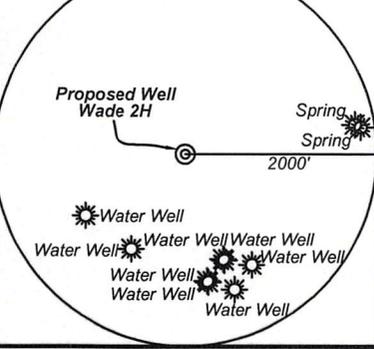
- Wellhead Layout**
- Pechora Unit 2H 47-095-0725
 - Pechora Unit 1H 47-095-02724
 - Whitmore Unit 2H 47-095-02727
 - Whitmore Unit 1H 47-095-02726
 - Proposed Well 47-095-02728
 - Wade Unit 2H 47-095-02728
 - Wade Unit 1H 47-095-02729



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

Note: 8 water wells and 2 springs 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.



Legend

- ⊙ Proposed gas well
- ⊙ Found corner, as noted
- ⊙ Existing Well, as noted
- ⊙ Digitized Well
- - - Existing Road
- Existing Road
- - - Surface boundary (approx.)
- Interior surface tracts (approx.)

11,181' to Bottom Hole

5,026' to Top Hole

Top Hole 7.5' Spot

TOP HOLE LATITUDE 39 - 30 - 00
BTM HOLE LATITUDE 39 - 27 - 30

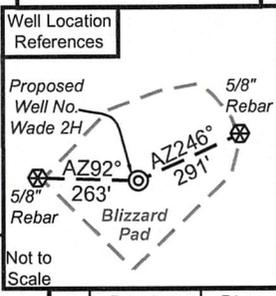
TOP HOLE LONGITUDE 80 - 50 - 00
BTM HOLE LONGITUDE 80 - 47 - 30

580' to Top Hole

3,191' to Bottom Hole

Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Wade Unit 2H Top Hole coordinates are
 N: 366,509.01' Latitude: 39°29'54.28"
 E: 1,618,730.44' Longitude: 80°51'04.12"
 Bottom Hole coordinates are
 N: 348,639.34' Latitude: 39°26'58.46"
 E: 1,624,076.72' Longitude: 80°49'52.54"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,372,107.442m N: 4,366,690.599m
 E: 512,813.568m E: 514,533.203m
 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. Wade Unit 2H UTM Zone 17, NAD 1927
 Top Hole Coordinates
 N: 14,343,441.37'
 E: 1,682,408.45'
 Point of Entry Coordinates
 N: 14,343,488.34'
 E: 1,681,894.88'
 Bottom Hole Coordinates
 N: 14,325,669.50'
 E: 1,688,050.30'



	Bearing	Dist.
L1	S 21°13' E	995.0'
L2	N 36°41' W	1,610.1'
L3	N 41°22' E	1,136.9'
L4	N 74°37' E	949.5'
L5	N 83°49' W	515.9'

FILE NO: 97-54-E-19
 DRAWING NO: Wade 2H BHL MOD
 SCALE: 1" = 2000'
 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: May 11 20 21
 OPERATOR'S WELL NO. Wade 2H
 API WELL NO MOD
 47 - 095 - 02728
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,004' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Shirley
 DISTRICT: Ellsworth COUNTY: Tyler 06/11/2021
 SURFACE OWNER: Roger D. Blizzard & Ruth E. Spencer ACREAGE: 102.62
 ROYALTY OWNER: The Swan Living Trust; Elmer Earl Bowser, Jr.; Bradley J. Carpenter; Patrick Lewis Smith; David E. Bowyer; Heritage Resources - Marcellus Minerals, LLC; B. Fred Hill Jr.; Virginia Dianne Thompson; WV DNR; LEASE NO: ACREAGE: 1.88; 1.00;

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: 7,000' TVD 27,000' 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

Antero Resources
Well No. Wade 2H
BHL MOD
Antero Resources Corporation

Detail 2



FILE NO: 97-54-E-19
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STATE OF WEST VIRGINIA
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OIL AND GAS DIVISION



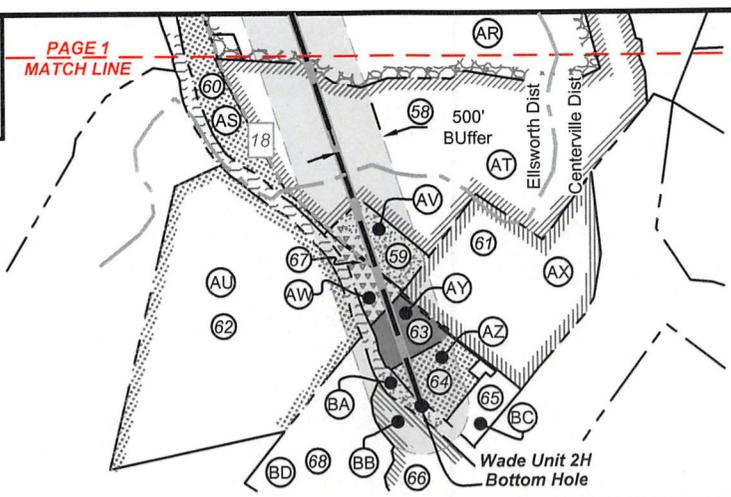
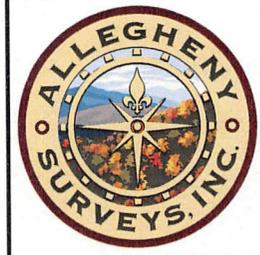
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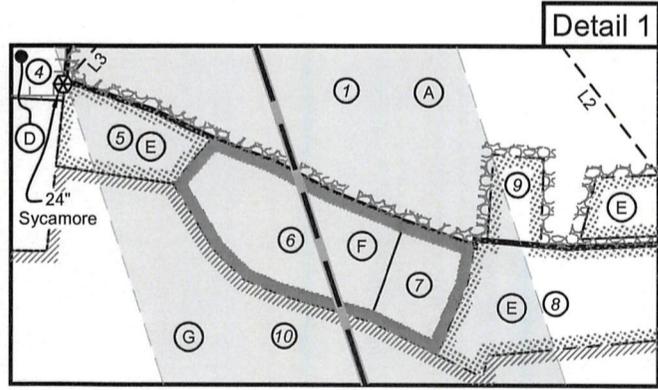
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ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313



Leases			
A	Heritage Resources - Marcellus Minerals, LLC	AA	Lloyd Carl Seckman
		AB	David E. Bowyer
B	Jerry R. Brown	AC	Brian R. Lemasters, et ux
C	B. Fred Hill Jr.	AD	Joshua D. Botkins
D	Clifford and Virginia Perkins Irrevocable Trust	AE	Randall L. Wise, et ux
		AF	April R. Weekley, et vir
E	Heritage Resources - Marcellus Minerals, LLC	AG	Brian M. Glover
		AH	Carolee J. Daniell
F	Virginia Dianne Thompson	AI	Rodney J. Davis
G	The Swan Living Trust	AJ	Donnie R. Griffey, et ux
H	Alfred Lonzo Eddy	AK	Robert O'Neil Dotson, et ux
I	Elmer Earl Bowser Jr.	AL	AMP Fund II, LP
J	Haessly Land & Timber, LLC	AM	Brian M. Weigle
K	City of Sistersville	AN	Stephanie D. McGowan
L	E. Lorna Howard Testamentary Trust	AO	Keith C. Smith, et ux
		AP	Mount Aris Cemetery
M	Kenneth R. & Jennifer L. Mason	AQ	Roger H. Smith
N	Bradley J. Carpenter	AR	Keith C. & Phyllis J. Smith
O	Ronald E. Thompson, et ux	AS	Triple Haught Trust
P	Alf Smith Cemetery	AT	Ronald L. Hoover, et ux
Q	Jeffrey D. Smith, et ux	AU	Larry Fletcher, et ux
R	Enoch Family Irrevocable Trust	AV	BRC Appalachian Minerals I, LLC
S	Patrick Lewis Smith	AW	Geraldine Owens Prunty
T	Danny L. & Terri E. Botkins	AX	William D. Morrison, et ux
U	Lee Roy Ferguson, et ux	AY	Jason S. Thompson, et ux
V	Rebecca Lynn Gebhardt	AZ	Kathy Ann Seago
W	Benjamin L. Botkins	BA	WV DNR
X	James R. Pinney	BB	BRC Appalachian Minerals I, LLC
Y	Phillip R. Edge	BC	OPEN
Z	Enoch Family Irrevocable Trust	BD	OPEN

ID	TM/Par	Owner	DB/PG	Acres
1	15-33	Roger D. Blizzard & Ruth E. Spencer	340/170	102.62
2	15-31	Roger D. Blizzard & Ruth E. Spencer	342/782	25.00
3	15-30	Thomas C. & Judeann L. Grinage	458/73	124.08
4	15-34.1	Randy & Pamela L. Lancaster	370/776	11.42
5	21-7	Gary O. & Anita K. Bennett	332 / 605	1.75
6	21-8	Roger D. & Darlene Blizzard	345/773	3.75
7	21-8.1	Charles M. & Amanda C. Spencer	397/36	1.32
8	21-10	Roger D. Blizzard & Ruth E. Spencer	340/170	5.00
9	21-9	Clayton M. & Ruth E. Spencer	201/541	0.71
10	21-14	Carl E. & Elsie M. Taylor	391/181	67.91
11	21-13	Alfred Lonzo Eddy	337/650	98.58
12	21-15	Stephanie & Joseph W. Havranek	254/153	45.48
13	21-53	Haessly Land & Timber, LLC	337/101A	89.88
14	21-52	Jennifer L. & Kenneth Mason	345/743	81.0
15	22-42	Sharon Christenson, et al	635/420	144.26
16	21-54	Sybill Gorby	WB 34/343	70.00
17	21-55	Ronald & Janet Thompson	400/552	12.50
18	21-57	Alf Smith Cemetery	107/393	3.00
19	22-42	Sharon Christenson, et al	635/420	144.26
20	22-43.1	Jeffery & Ricki L. Smith	317/507	4.17
21	22-49	Enoch Family Irrevocable Trust	440/433	4.14
22	21-60	Danny & Terri Botkins	342/556	0.86
23	21-58	Roger & Kendra Wyke	219/276	1.55
24	21-61	Danny & Terri Botkins	342/556	1.51
25	22-44	Darell & Doris McCormick	385/776	2.80
26	22-47.3	Lee Roy & Tracey Ferguson	355/656	2.39
27	21-62	Lewis Timmons Estate	332/1	1.8
28	28-5.1	Benjamin L. Botkins	410/440	0.79
29	22-47.4	Samantha Anderson	591/348	2.36
30	22-52	Phillip R. & Mary L. Edge	304/473	0.11
31	28-1.1	Lois J. Estep	258/641	0.97
32	28-1	Lois J. Estep & Edward E. Estep	359/613	1.11
33	28-2	Mary Ladene Lemasters	299/548	2.37
34	28-5	Phillip R. & Mary L. Edge	261/687	0.93
35	28-4	David A. Mays & Connie S. Gilbert	WB 76/405	11.11
36	28-3	Lloyd C. & Kathen G. Seckman	184/296	2.88
37	28-13	David E. Bowyer	481/234	3.97
38	28-4.1	Brian R. & Brooke A. Lemasters	617/403	1.10
39	28-4.3	Jerry T. & Lavonne L. Williams	311/89	1.91
40	28-7	Randall L. & Kathryn M. Wise	442/85	9.00
41	28-4.2	Joshua D. Botkins	451/569	1.18
42	28-4.6	Brian M. Glover	397/415	0.83
43	28-12	April Watkinson & Thomas Weekley	611/755	1.88
44	28-11	Rodney J. & Kennetta K. Davis	281/348	1.00
45	28-11.1	Donnie R. & Melissa K. Griffey	323/700	1.00
46	28-14	Robert & Sandra Dotson	213/445	0.87
47	28-10	Carol Knapp Rev. Trust	435/461	9.20
48	28-10.1	Jean A. & Tom Gump	556/92	8.20
49	28-8	Robert L. & Carolee J. Daniell	WB 43/267	30.00
50	28-17	Kathy Ann Seago, et al	WB 41/119	12.11
51	28-16.1	Brian Weigle	353/776	2.36
52	28-16	Kathy Ann Seago, et al	WB 41/119	4.54
53	28-25	Ripley Alma Methodist Church	199/1	0.86
54	28-24.1	Church of Christ	332/580	0.94
55	28-24	Mt. Aris Union Church & Cemetery	246/47	0.97
56	28-23	Troy & Kelly Smith	OR 20/722	3.60
57	28-29	Keith C. Smith	WB 35/228	116.72
58	28-28	Ronald & Linda Hoover	184/383	136.22
59	5-1	Melvin E. & Sandra K. Ferguson	281/315	6.25
60	28-27	Kenneth & Jennifer Mason	353/389	72.00
61	5-4	Kenneth & Jennifer L. Mason	OR 75/585	52.78
62	2-1	Larry & Betty Fletcher	312/200	120.00
63	5-3	Jason & Melissa R. Thompson	397/39	7.52
64	5-4.1	Kathy Ann Seago, et al	WB 41/119	10.62
65	10-50	Steve Weigle, et al	OR 21/31	6.59
66	5-3	Kenneth Mason	322/724	105.00
67	5-2	James S. Taylor	403/297	6.00
68	5-12	Robert F. & Rita Scardina	203/260	36.90



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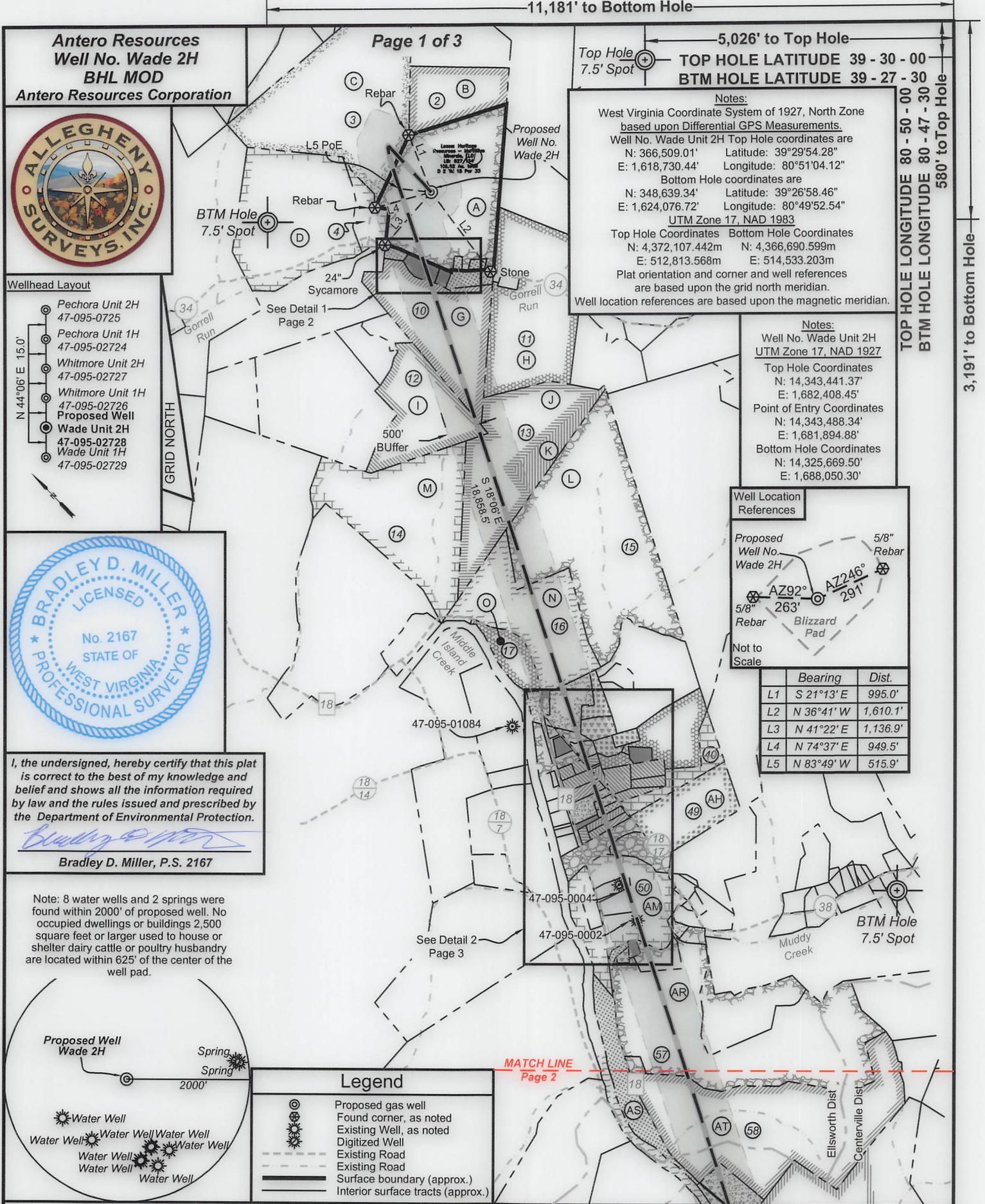
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 28,009; 17,401; 1,000; 1.103; 1.092; 3.97;

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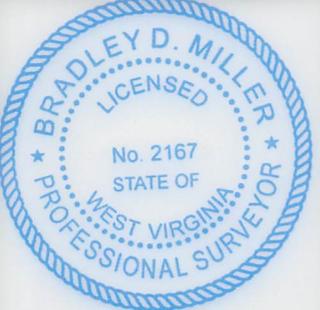


Antero Resources
Well No. Wade 2H
BHL MOD
Antero Resources Corporation



Wellhead Layout

○	Pechora Unit 2H	47-095-0725
○	Pechora Unit 1H	47-095-02724
○	Whitmore Unit 2H	47-095-02727
○	Whitmore Unit 1H	47-095-02726
○	Proposed Well	47-095-02728
○	Wade Unit 2H	47-095-02728
○	Wade Unit 1H	47-095-02729

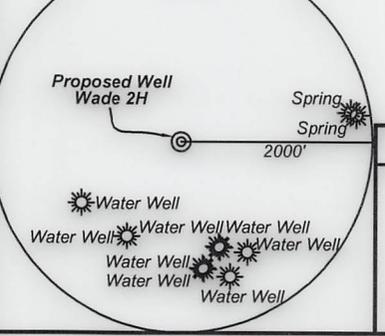


I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller

Bradley D. Miller, P.S. 2167

Note: 8 water wells and 2 springs 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.



Legend

○	Proposed gas well
⊙	Found corner, as noted
⊗	Existing Well, as noted
⊕	Digitized Well
---	Existing Road
---	Existing Road
---	Surface boundary (approx.)
---	Interior surface tracts (approx.)

11,181' to Bottom Hole

5,026' to Top Hole

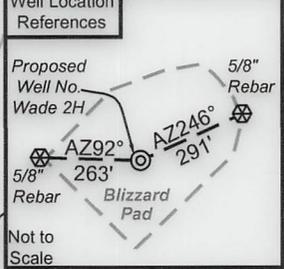
Top Hole 7.5' Spot

TOP HOLE LATITUDE 39 - 30 - 00
BTM HOLE LATITUDE 39 - 27 - 30

TOP HOLE LONGITUDE 80 - 50 - 00
BTM HOLE LONGITUDE 80 - 47 - 30
580' to Top Hole
3,191' to Bottom Hole

Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Wade Unit 2H Top Hole coordinates are
 N: 366,509.01' Latitude: 39°29'54.28"
 E: 1,618,730.44' Longitude: 80°51'04.12"
 Bottom Hole coordinates are
 N: 348,639.34' Latitude: 39°26'58.46"
 E: 1,624,076.72' Longitude: 80°49'52.54"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,372,107.442m N: 4,366,690.599m
 E: 512,813.568m E: 514,533.203m
 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. Wade Unit 2H
 UTM Zone 17, NAD 1927
 Top Hole Coordinates
 N: 14,343,441.37'
 E: 1,682,408.45'
 Point of Entry Coordinates
 N: 14,343,488.34'
 E: 1,681,894.88'
 Bottom Hole Coordinates
 N: 14,325,669.50'
 E: 1,688,050.30'



	Bearing	Dist.
L1	S 21°13' E	995.0'
L2	N 36°41' W	1,610.1'
L3	N 41°22' E	1,136.9'
L4	N 74°37' E	949.5'
L5	N 83°49' W	515.9'

FILE NO: 97-54-E-19
 DRAWING NO: Wade 2H BHL MOD
 SCALE: 1" = 2000'
 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: May 11 20 21
 OPERATOR'S WELL NO. Wade 2H
 API WELL NO **M3D**
 47 - 095 - 02728
 STATE COUNTY PERMIT

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

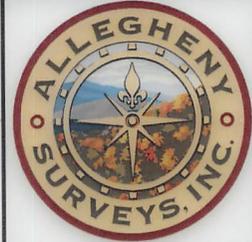
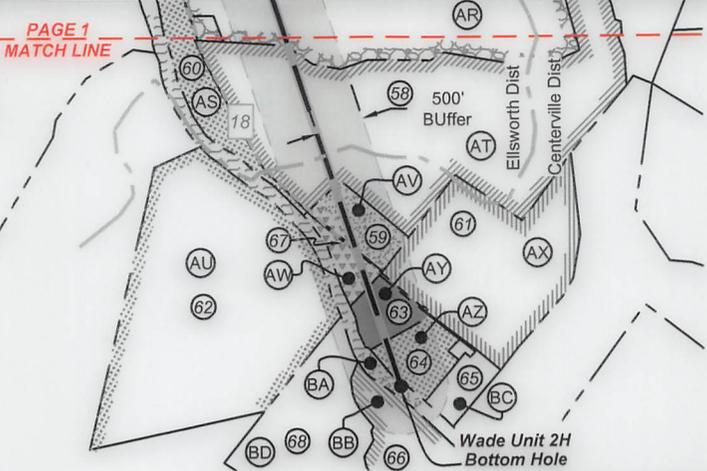
LOCATION: ELEVATION: As-Built 1,004' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Shirley
 DISTRICT: Ellsworth COUNTY: Tyler **06/11/2021**

SURFACE OWNER: Roger D. Blizzard & Ruth E. Spencer ACREAGE: 102.62
 ROYALTY OWNER: The Swan Living Trust; Elmer Earl Bowser, Jr.; Bradley J. Carpenter; Patrick Lewis Smith; David E. Bowyer; Heritage Resources - Marcellus Minerals, LLC; B. Fred Hill Jr.; Virginia Dianne Thompson; WV DNR; LEASE NO: _____ ACREAGE: 1.88; 1.00;

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: 7,000' TVD
27,000' 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

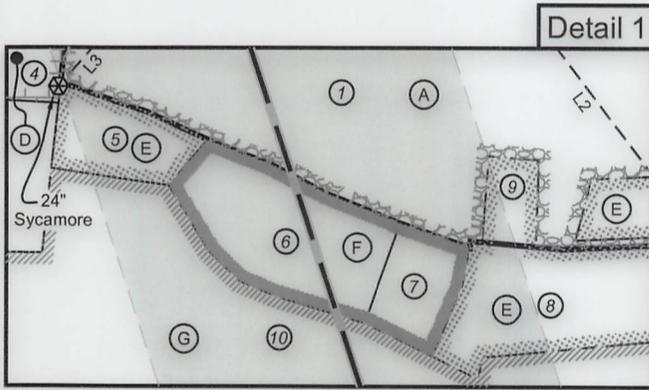
Antero Resources
Well No. Wade 2H
BHL MOD
Antero Resources Corporation



Page 2 of 3

Leases			
A	Heritage Resources - Marcellus Minerals, LLC	AA	Lloyd Carl Seckman
		AB	David E. Bowyer
B	Jerry R. Brown	AC	Brian R. Lemasters, et ux
C	B. Fred Hill Jr.	AD	Joshua D. Botkins
D	Clifford and Virginia Perkins Irrevocable Trust	AE	Randall L. Wise, et ux
		AF	April R. Weekley, et vir
E	Heritage Resources - Marcellus Minerals, LLC	AG	Brian M. Glover
		AH	Carolee J. Daniell
F	Virginia Dianne Thompson	AI	Rodney J. Davis
G	The Swan Living Trust	AJ	Donnie R. Griffey, et ux
H	Alfred Lonzo Eddy	AK	Robert O'Neil Dotson, et ux
I	Elmer Earl Bowser Jr.	AL	AMP Fund II, LP
J	Haessly Land & Timber, LLC	AM	Brian M. Weigle
K	City of Sistersville	AN	Stephanie D. McGowan
L	E. Lorna Howard Testamentary Trust	AO	Keith C. Smith, et ux
		AP	Mount Aris Cemetery
M	Kenneth R. & Jennifer L. Mason	AQ	Roger H. Smith
N	Bradley J. Carpenter	AR	Keith C. & Phyllis J. Smith
O	Ronald E. Thompson, et ux	AS	Triple Haught Trust
P	Alf Smith Cemetery	AT	Ronald L. Hoover, et ux
Q	Jeffrey D. Smith, et ux	AU	Larry Fletcher, et ux
R	Enoch Family Irrevocable Trust	AV	BRC Appalachian Minerals I, LLC
S	Patrick Lewis Smith	AW	Geraldine Owens Prunty
T	Danny L. & Terri E. Botkins	AX	William D. Morrison, et ux
U	Lee Roy Ferguson, et ux	AY	Jason S. Thompson, et ux
V	Rebecca Lynn Gebhardt	AZ	Kathy Ann Seago
W	Benjamin L. Botkins	BA	WV DNR
X	James R. Pinney	BB	BRC Appalachian Minerals I, LLC
Y	Phillip R. Edge	BC	OPEN
Z	Enoch Family Irrevocable Trust	BD	OPEN

ID	TM/Par	Owner	DB/PG	Acres
1	15-33	Roger D. Blizzard & Ruth E. Spencer	340/170	102.62
2	15-31	Roger D. Blizzard & Ruth E. Spencer	342/782	25.00
3	15-30	Thomas C. & Jeudeann L. Grinage	458/73	124.08
4	15-34.1	Randy & Pamela L. Lancaster	370/776	11.42
5	21-7	Gary O. & Anita K. Bennett	332 / 605	1.75
6	21-8	Roger D. & Darlene Blizzard	345/773	3.75
7	21-8.1	Charles M. & Amanda C. Spencer	397/36	1.32
8	21-10	Roger D. Blizzard & Ruth E. Spencer	340/170	5.00
9	21-9	Clayton M. & Ruth E. Spencer	201/541	0.71
10	21-14	Carl E. & Elsie M. Taylor	391/181	67.91
11	21-13	Alfred Lonzo Eddy	337/650	98.58
12	21-15	Stephanie & Joseph W. Havranek	254/153	45.48
13	21-53	Haessly Land & Timber, LLC	337/101A	89.88
14	21-52	Jennifer L. & Kenneth Mason	345/743	81.0
15	22-42	Sharon Christenson, et al	635/420	144.26
16	21-54	Sybill Gorby	WB 34/343	70.00
17	21-55	Ronald & Janet Thompson	400/552	12.50
18	21-57	ALF Smith Cemetery	107/393	3.00
19	22-42	Sharon Christenson, et al	635/420	144.26
20	22-43.1	Jeffery & Ricki L. Smith	317/507	4.17
21	22-49	Enoch Family Irrevocable Trust	440/433	4.14
22	21-60	Danny & Terri Botkins	342/556	0.86
23	21-58	Roger & Kendra Wyke	219/276	1.55
24	21-61	Danny & Terri Botkins	342/556	1.51
25	22-44	Darell & Doris McCormick	385/776	2.80
26	22-47.3	Lee Roy & Tracey Ferguson	355/656	2.39
27	21-62	Lewis Timmons Estate	332/1	1.8
28	28-5.1	Benjamin L. Botkins	410/440	0.79
29	22-47.4	Samantha Anderson	591/348	2.36
30	22-52	Phillip R. & Mary L. Edge	304/473	0.11
31	28-1.1	Lois J. Estep	258/641	0.97
32	28-1	Lois J. Estep & Edward E. Estep	359/613	1.11
33	28-2	Mary Ladene Lemasters	299/548	2.37
34	28-5	Phillip R. & Mary L. Edge	261/687	0.93
35	28-4	David A. Mays & Connie S. Gilbert	WB 76/405	11.11
36	28-3	Lloyd C. & Kathen G. Seckman	184/296	2.88
37	28-13	David E. Bowyer	481/234	3.97
38	28-4.1	Brian R. & Brooke A. Lemasters	617/403	1.10
39	28-4.3	Jerry T. & Lavonne L. Williams	311/89	1.91
40	28-7	Randall L. & Kathryn M. Wise	442/85	9.00
41	28-4.2	Joshua D. Botkins	451/569	1.18
42	28-4.6	Brian M. Glover	397/415	0.83
43	28-12	April Watkinson & Thomas Weekley	611/755	1.88
44	28-11	Rodney J. & Kenna K. Davis	281/348	1.00
45	28-11.1	Donnie R. & Melissa K. Griffey	323/700	1.00
46	28-14	Robert & Sandra Dotson	213/445	0.87
47	28-10	Carol Knapp Rev. Trust	435/461	9.20
48	28-10.1	Jean A. & Tom Gump	556/92	8.20
49	28-8	Robert L. & Carolee J. Daniell	WB 43/267	30.00
50	28-17	Kathy Ann Seago, et al	WB 41/119	12.11
51	28-16.1	Brian Weigle	353/776	2.36
52	28-16	Kathy Ann Seago, et al	WB 41/119	4.54
53	28-25	Ripley Alma Methodist Church	199/1	0.86
54	28-24.1	Church of Christ	332/580	0.94
55	28-24	Mt. Aris Union Church & Cemetery	246/47	0.97
56	28-23	Troy & Kelly Smith	OR 20/722	3.60
57	28-29	Keith C. Smith	WB 35/228	116.72
58	28-28	Ronald & Linda Hoover	184/383	136.22
59	5-1	Melvin E. & Sandra K. Ferguson	281/315	6.25
60	28-27	Kenneth & Jennifer Mason	353/389	72.00
61	5-4	Kenneth & Jennifer L. Mason	OR 75/585	52.78
62	2-1	Larry & Betty Fletcher	312/200	120.00
63	5-3	Jason & Melissa R. Thompson	397/39	7.52
64	5-4.1	Kathy Ann Seago, et al	WB 41/119	10.62
65	10-50	Steve Weigle, et al	OR 21/31	6.59
66	5-3	Kenneth Mason	322/724	105.00
67	5-2	James S. Taylor	403/297	6.00
68	5-12	Robert F. & Rita Scardina	203/260	36.90



FILE NO: 97-54-E-19
 DRAWING NO: Wade 2H BHL MOD
 SCALE: 1" = 2000'
 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: May 11 20 21
 OPERATOR'S WELL NO. Wade 2H
 API WELL NO MOD
 47 - 095 - 02728
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built 1,004' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Shirley
 DISTRICT: Ellsworth COUNTY: Tyler
 SURFACE OWNER: Roger D. Blizzard & Ruth E. Spencer ACREAGE: 102.62
 ROYALTY OWNER: The Swan Living Trust; Elmer Earl Bowser, Jr.; Bradley J. Carpenter; Patrick Lewis Smith; David E. Bowyer; LEASE NO: ACREAGE: 1.88; 1.00;
 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: 27,000' 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

06/11/2021

Antero Resources
Well No. Wade 2H
BHL MOD
Antero Resources Corporation

Detail 2



FILE NO: 97-54-E-19
DRAWING NO: Wade 2H BHL MOD
SCALE: 1" = 2000'
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: May 11 20 21
OPERATOR'S WELL NO. Wade 2H
API WELL NO **MoD**
47 - 095 - 02728
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,004' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Shirley
DISTRICT: Ellsworth COUNTY: Tyler 06/11/2021
SURFACE OWNER: Roger D. Blizzard & Ruth E. Spencer
ROYALTY OWNER: The Swan Living Trust; Elmer Earl Bowser, Jr.; Bradley J. Carpenter; Patrick Lewis Smith; David E. Bowyer; Heritage Resources - Marcellus Minerals, LLC; B. Fred Hill Jr.; Virginia Dianne Thompson; WV DNR; LEASE NO: _____ ACREAGE: _____
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD
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27,000' 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

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
A.	<u>Heritage Resources Marcellus Minerals Lease (TM 28 PCL 31)</u> Heritage Resources Marcellus Minerals	Antero Resources Corporation	1/8+	0627/0134
C.	<u>B. Fred Hill Jr. Lease</u> B. Fred Hill Jr.	Antero Resources Corporation	1/8+	0531/0516
E.	<u>Heritage Resources Marcellus Minerals Lease (TM 28 PCL 31.8)</u> Heritage Resources Marcellus Minerals	Antero Resources Corporation	1/8+	0627/0134
F.	<u>Virginia Dianne Thompson Lease</u> Virginia Dianne Thompson Statoil USA Onshore Properties EQT Production Company	Statoil USA Onshore Properties EQT Production Company Antero Resources Corporation	Assignment Assignment Assignment	0406/0147 0539/0239 0663/0001
G.	<u>The Swan Living Trust Lease</u> The Swan Living Trust	Antero Resources Corporation	1/8+	0400/0694
I.	<u>Elmar Earl Bowser Jr Lease</u> Elmar Earl Bowser Jr	Antero Resources Corporation	1/8	559/53
J.	<u>Haessly Land & Timber LLC Lease</u> Haessly Lan & Timber LLC	Antero Resources Corporation	1/8+	87/713
L.	<u>E. Lorna Howard Testamentary Trust Lease</u> E. Lorna Howard Testamentary Trust	Antero Resources Corporation	1/8+	93/465
M.	<u>Bradley J Carpenter Lease</u> Bradley J Carpenter	Antero Resources Corporation	1/8+	621/39
S.	<u>Patrick Lewis Smith Lease</u> Patrick Lewis Smith	Antero Resources Corporation	1/8+	26/214
W.	<u>Benjamin L Botkins Lease</u> Benjamin L Botkins	Antero Resources Corporation	1/8+	86/463
X.	<u>James Pinney Lease</u> James Pinney	Antero Resources Corporation	1/8	29/763

RECEIVED
Office of Oil and Gas
MAY 28 2021
WV Department of
Environmental Protection

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

**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
Y.	<u>Phillip R Edge Lease</u> Phillip R Edge	Antero Resources Corporation	1/8+	68/341
AA.	<u>Lloyd Carl Seckman Lease</u> Lloyd Carl Seckman	Antero Resources Corporation	1/8+	536/29
AB	<u>David E Bowyer Lease</u> David E Bowyer	Antero Resources Corporation	1/8+	71/83
AC	<u>Brian R Lemaster et ux Lease</u> Brian R Lemaster et ux	Antero Resources Corporation	1/8+	86/485
AD.	<u>Joshua D Botkins Lease</u> Joshua D Botkins	Antero Resources Corporation	1/8+	50/789
AE	<u>April R Weekley et vir Lease</u> April R Weekley et vir	Antero Resources Corporation	1/8	21/550
AI.	<u>Rodney J Davis Lease</u> Rodney J Davis	Antero Resources Corporation	1/8+	654/523
AI.	<u>Donnie R Griffey et ut Lease</u> Donnie R Griffey et ux	Antero Resources Corporation	1/8+	654/517
AL.	<u>AMP Fund II LP Lease</u> AMP Fund II LP	Antero Resources Corporation	1/8+	557/685
AM	<u>Brian M Weigle Lease</u> Brian M Weigle	Antero Resources Corporation	1/8+	661/646
AR.	<u>Keith C Smith et ux Lease</u> Keith C Smith et ut	Antero Resources Corporation	1/8+	547/461
AT.	<u>Ronald L Hoover et ux Lease</u> Ronald L Hoover et ux	Antero Resources Corporation	1/8+	556/321
AV	<u>BRC Appalachian Mineral I LLC Lease</u> BRC Appalachian Mineral I LLC BRC Working Interest Company LLC Chesapeake Appalachia LLC Statoil USA Onshore Properties Inc EQT Production Company	BRC Working Interest Company LLC Chesapeake Appalachia LLC Statoil USA Onshore Properties Inc EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment	369/300 369/784 378/764 539/239 663/1

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Office of Oil and Gas
MAY 28 2021
WV Department of
Environmental Protection

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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
A ^W	<u>Geraldine Owens Prunty Lease</u> Geraldine Owens Prunty	Antero Resources Corporation	1/8+	101/158
A ^Y	<u>Jason S Thompson et ux Lease</u> Jason S Thompson et ux	Antero Resources Corporation	1/8+	440/58
A ^Z	<u>Kathy Ann Seago Lease</u> Kathy Ann Seago	Antero Resources Corporation	1/8+	442/497

***Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act**

*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.

RECEIVED
 Office of Oil and Gas
 MAY 28 2021
 WV Department of
 Environmental Protection

WW-6A1
(5/13)

Operator's Well No. Wade 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)**

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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
BA <u>WV DNR Lease</u>	WV DNR	Antero Resources Corporation	1/8+	106/135

*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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Office of Oil and Gas
MAY 28 2021
WV Department of
Environmental Protection

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



May 27, 2021

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

EXPEDITED

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modification for approved well on the Blizzard Pad. We are requesting to extend the wellbore for the Wade Unit 2H (API# 47-095-02728).

Check # 229538
5/18/2021
\$5,000

Attached you will find the following documents:

- REVISED Form WW-6B
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plat

If you have any questions please feel free to contact me at (303) 357-7182.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Mallory Stanton".

Mallory Stanton
Permitting Supervisor
Antero Resources Corporation

RECEIVED
Office of Oil and Gas

MAY 28 2021

WV Department of
Environmental Protection

Enclosures

06/11/2021



May 27, 2021

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 modification for approved well on the Blizzard Pad. We are requesting to extend the wellbore for the Wade Unit 2H (API# 47-095-02728).

Attached you will find the following documents:

- REVISED Form WW-6B
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plat

If you have any questions please feel free to contact me at (303) 357-7182.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Mallory Stanton".

Mallory Stanton
Permitting Supervisor
Antero Resources Corporation

Enclosures

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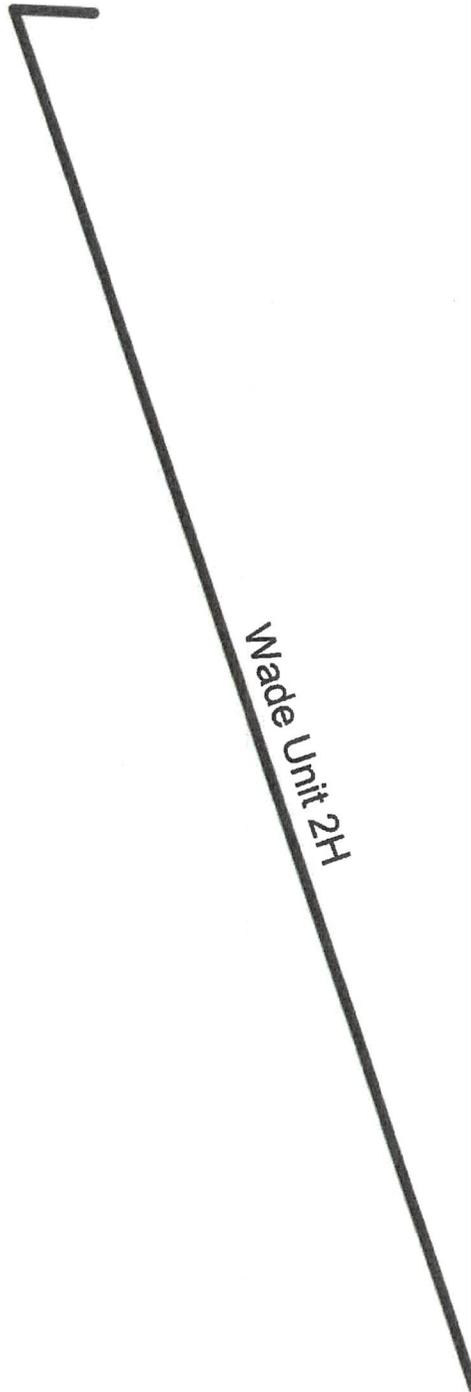
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PERMIT MODIFICATION API # 47-095-02728



Antero Resources Corporation

Wade Unit 2H - AOR



REMARKS

No Wells of Interest

January 21, 2020

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06/11/2021

WW-6B
(04/15)

API NO. 47-095 - 02728
 OPERATOR WELL NO. Wade Unit 2H
 Well Pad Name: Blizzard 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 Porters Falls 7.5'
 Operator ID County District Quadrangle

2) Operator's Well Number: Wade Unit 2H Well Pad Name: Blizzard Pad

3) Farm Name/Surface Owner: Roger D. Blizzard & Ruth E. Spencer Public Road Access: US Route 34

4) Elevation, current ground: 1004' 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: 7000' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 27000'

11) Proposed Horizontal Leg Length: 18859'

12) Approximate Fresh Water Strata Depths: 16'

13) Method to Determine Fresh Water Depths: 47-095-02274

14) Approximate Saltwater Depths: 1430', 1813'

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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WW-6B
(04/15)

API NO. 47- 095 - 02728

OPERATOR WELL NO. Wade Unit 2H

Well Pad Name: Blizzard 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#	300	300	CTS, 417 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#	27000	27000	7016 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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Environmental Protection

WW-6B
(10/14)

API NO. 47- 095 - 02728
 OPERATOR WELL NO. Wade Unit 2H
 Well Pad Name: Blizzard Pad

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

Drill a new horizontal shallow well into the Marcellus Shale.

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 26.80 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 9.52 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:

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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
<u>Heritage Resources Marcellus Minerals Lease (TM 28 PCL 31)</u> Heritage Resources Marcellus Minerals	Antero Resources Corporation	1/8+	0627/0134
<u>B. Fred Hill Jr. Lease</u> B. Fred Hill Jr.	Antero Resources Corporation	1/8+	0531/0516
<u>Heritage Resources Marcellus Minerals Lease (TM 28 PCL 31.8)</u> Heritage Resources Marcellus Minerals	Antero Resources Corporation	1/8+	0627/0134
<u>Virginia Dianne Thompson Lease</u> Virginia Dianne Thompson Statoil USA Onshore Properties EQT Production Company	Statoil USA Onshore Properties EQT Production Company Antero Resources Corporation	Assignment Assignment Assignment	0406/0147 0539/0239 0663/0001
<u>The Swan Living Trust Lease</u> The Swan Living Trust	Antero Resources Corporation	1/8+	0400/0694
<u>Elmar Earl Bowser Jr Lease</u> Elmar Earl Bowser Jr	Antero Resources Corporation	1/8	559/53
<u>Haessly Land & Timber LLC Lease</u> Haessly Lan & Timber LLC	Antero Resources Corporation	1/8+	87/713
<u>E. Lorna Howard Testamentary Trust Lease</u> E. Lorna Howard Testamentary Trust	Antero Resources Corporation	1/8+	93/465
<u>Bradley J Carpenter Lease</u> Bradley J Carpenter	Antero Resources Corporation	1/8+	621/39
<u>Patrick Lewis Smith Lease</u> Patrick Lewis Smith	Antero Resources Corporation	1/8+	26/214
<u>Benjamin L Botkins Lease</u> Benjamin L Botkins	Antero Resources Corporation	1/8+	86/463
<u>James Pinney Lease</u> James Pinney	Antero Resources Corporation	1/8	29/763

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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.

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Phillip R Edge Lease</u> Phillip R Edge	Antero Resources Corporation	1/8+	68/341
<u>Lloyd Carl Seckman Lease</u> Lloyd Carl Seckman	Antero Resources Corporation	1/8+	536/29
<u>David E Bowyer Lease</u> David E Bowyer	Antero Resources Corporation	1/8+	71/83
<u>Brian R Lemaster et ux Lease</u> Brian R Lemaster et ux	Antero Resources Corporation	1/8+	86/485
<u>Joshua D Botkins Lease</u> Joshua D Botkins	Antero Resources Corporation	1/8+	50/789
<u>April R Weekley et vir Lease</u> April R Weekley et vir	Antero Resources Corporation	1/8	21/550
<u>Rodney J Davis Lease</u> Rodney J Davis	Antero Resources Corporation	1/8+	654/523
<u>Donnie R Griffey et ut Lease</u> Donnie R Griffey et ux	Antero Resources Corporation	1/8+	654/517
<u>AMP Fund II LP Lease</u> AMP Fund II LP	Antero Resources Corporation	1/8+	557/685
<u>Brian M Weigle Lease</u> Brian M Weigle	Antero Resources Corporation	1/8+	661/646
<u>Keith C Smith et ux Lease</u> Keith C Smith et ut	Antero Resources Corporation	1/8+	547/461
<u>Ronald L Hoover et ux Lease</u> Ronald L Hoover et ux	Antero Resources Corporation	1/8+	556/321
<u>BRC Appalachian Mineral I LLC Lease</u> BRC Appalachian Mineral I LLC BRC Working Interest Company LLC Chesapeake Appalachia LLC Statoil USA Onshore Properties Inc EQT Production Company	BRC Working Interest Company LLC Chesapeake Appalachia LLC Statoil USA Onshore Properties Inc EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment	369/300 369/784 378/764 539/239 663/1

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Geraldine Owens Prunty Lease</u> Geraldine Owens Prunty	Antero Resources Corporation	1/8+	101/158
<u>Jason S Thompson et ux Lease</u> Jason S Thompson et ux	Antero Resources Corporation	1/8+	440/58
Kathy Ann Seago Lease Kathy Ann Seago	Antero Resources Corporation	1/8+	442/497

***Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act**

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WW-6A1
(5/13)

Operator's Well No. Wade Unit 2H

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>WV DNR Lease</u>	WV DNR	Antero Resources Corporation	1/8+	106/135

*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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Page 1 of 1 **JUN 07 2021**