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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Monday, August 29, 2022  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for ASPEN 1H  
47-017-06926-00-00

Lateral Extension, Drilling near other laterals

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.

A handwritten signature in blue ink, appearing to read "James A. Martin".

James A. Martin  
Chief

Operator's Well Number: ASPEN 1H  
Farm Name: MICHAEL R BRITTON & ANGELA D PRATT  
U.S. WELL NUMBER: 47-017-06926-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 8/29/2022

Promoting a healthy environment.

09/02/2022

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

1) Well Operator: Antero Resources Corporal 494507062 017 - Doddri West Uni West Union 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Aspen Unit 1H MOD Well Pad Name: Oxford 98 Pad

3) Farm Name/Surface Owner: Michael R. Britton & Angela D. Pratt Public Road Access: CR 11/4

4) Elevation, current ground: 1120' AS-BUILT Elevation, proposed post-construction: \_\_\_\_\_

5) Well Type (a) Gas X Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_

(b) If Gas Shallow X Deep \_\_\_\_\_  
Horizontal X \_\_\_\_\_

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6600' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6600' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19700'

11) Proposed Horizontal Leg Length: 9044.2'

12) Approximate Fresh Water Strata Depths: 123'

13) Method to Determine Fresh Water Depths: 47-017-02837, 47-017-06326 Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1653'

15) Approximate Coal Seam Depths: 120'

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 X

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

WW-6B  
(04/15)

API NO. 47- 017 - 06926  
OPERATOR WELL NO. Aspen Unit 1H MOD  
Well Pad Name: Oxford 98 Pad

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DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
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*SOW  
8/25/2022*

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Seam: \_\_\_\_\_  
Owner: \_\_\_\_\_

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	79#	80'	80'	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J/K-55	54.5#	300'	300'	CTS, 313 Cu. Ft.
Coal	9-5/8"	New	J-/K55	36#	2500'	2500'	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110CY	20#	19700'	19700'	CTS, 4047 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*SDeW*  
*8/25/2022*

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"	0.375"	2250	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"	14,360	2500	Class G/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			

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.

\*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): 24.47 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.73 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

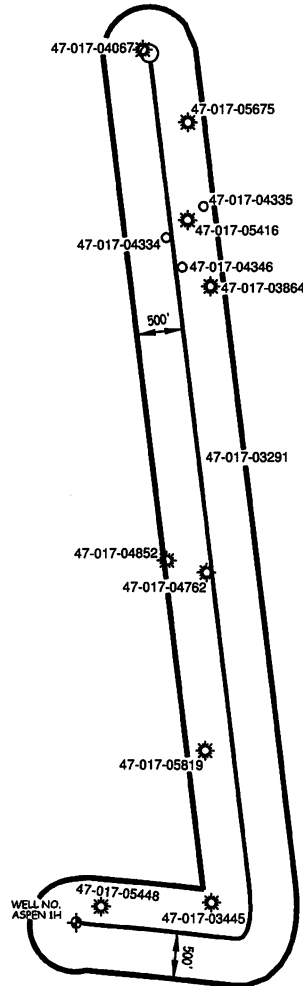
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AUG 18 2022  
West Virginia Department of  
Environmental Protection

25) Proposed borehole conditioning procedures:

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

\*Note: Attach additional sheets as needed.

# OXFORD 98 PAD ANTERO RESOURCES CORPORATION



RECEIVED  
Office of Oil and Gas

AUG 18 2022

WV Department of  
Environmental Protection

WILLOW LAND SURVEYING, PLLC  
P.O. BOX 17, PENNSBORO, WV 26415  
(304) 659-1717

JOB #: 22-005WA

DATE: 08/04/22

DRAWN BY: D.L.P.

FILE: ASPEN1HAOR.DWG

SCALE : 1-INCH = 2000-FEET

0'                      2000'                      4000'                      6000'



09/02/2022

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Productible Formation(s) not perf'd
47017054480000	DEPI	15129	DIVERSIFIED PROD LLC	DOMINION EXPL&PROD	5,310	2589 - 5174	Gordon, Warren, Riley, Alexander	Weir, Berea, Benson
47017034450000	MINNIS RICHARD W & JOAN	1321	DIVERSIFIED PROD LLC	CNG DEVELOPMENT CO	5,182	4882 - 4931	Gordon, Speechley, Alexander	Weir, Berea, Benson
47017058190000	DEPI	15128	DIVERSIFIED PROD LLC	DOMINION EXPL&PROD	5,170		Squaw, Gordon, Warren, Bradford, Riley	Weir, Berea, Benson
47017047620000	FLEMING	2	KEY OIL CO	KEY OIL CO	5,314		Warren, Speechley, Balltown, Riley, Benson	Weir, Berea
47017048520000	FLEMING	8	KEY OIL CO	KEY OIL CO	2,707		Big Lime, Big Lime, Hampshire	Weir, Berea, Benson
47017032910000	NETZER J S & J	449	ALLIANCE PET CO LLC	CNG DEVELOPMENT CO	5,350		Big Injun, Gordon, Speechley, Balltown, Alexander	Weir, Berea, Benson
47017038640000	MITCHELS CHARLES ETAL	1	GREYLOCK OPCO LLC	EASTERN AMERICAN ENE	5,583		Riley, Benson, Alexander	Weir, Berea
47017043460000								Weir, Berea, Benson
47017043340000	WILLIAM WOLFE	1	P G OIL & GAS INC	BOWIE INC				Weir, Berea, Benson
47017054160000	MAXWELL/KNIGHT	1	KEY OIL CO	KEY OIL CO	5,293	3214 - 5179	Speechley, Riley, Benson, Alexander	Weir, Berea
47017043350000	WILLIAM WOLFE	1	P G OIL & GAS INC	BOWIE INC				Weir, Berea, Benson
47017056750000	MAXWELL / KNIGHT	4	KEY OIL CO	KEY OIL CO	2,768	1918 - 2570	Keener, Gordon	Weir, Berea, Benson
47017040670000	SPURGEON H C	3	HARPER CROSBY HOLDNG	RARE EARTH ENERGY	5,318	3278 - 5160	Balltown, Bradford, Benson, Alexander, Elk	Weir, Berea

WV Department of  
 Environmental Protection

AUG 18 2022

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 Office of Oil and Gas

LATITUDE 39°17'30"

2,241'

LATITUDE 39°17'30"

1,568' TO BOTTOM HOLE

Antero Resources Corporation Well No. Aspen 1H

NOTES: WELL 1H TOP HOLE INFORMATION: N: 277,007ft E: 1,631,988ft LAT: 39°15'11.66" LON: 80°47'58.49" BOTTOM HOLE INFORMATION: N: 286,372ft E: 1,632,795ft LAT: 39°16'44.33" LON: 80°47'49.95" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 4,344,908m E: 517,308m BOTTOM HOLE INFORMATION: N: 4,347,765m E: 517,506m

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 14,254,204ft E: 1,697,153ft POINT OF ENTRY INFORMATION: N: 14,254,619ft E: 1,699,016ft BOTTOM HOLE INFORMATION: N: 14,263,578ft E: 1,697,803ft

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.

Table listing West Union District and various landowners/leases with well numbers (e.g., 14-02 Alfred Perine, 15-01 Jonathan Summers Lease, etc.)

WV NORTH ZONE GRID NORTH

4,620' TO BOTTOM HOLE

13,997'

LONGITUDE 80°47'30"

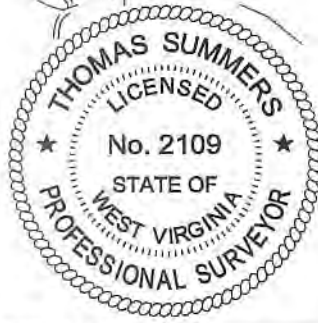
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I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

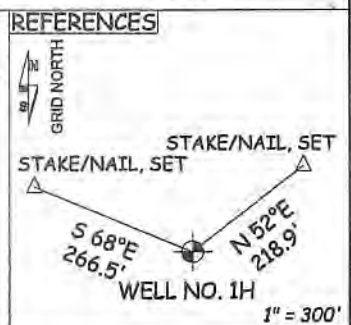
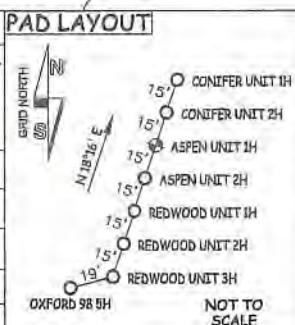


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS. WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415



JOB # 19-039WA DRAWING # ASPEN1H 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 +/- Adjoining Surface Tracts +/- Found monument, as noted THOMAS SUMMERS P.S. 2109 DATE 08/04/22 OPERATOR'S WELL# ASPEN 1H



WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 017 06926 MOD (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,120' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE WEST UNION 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE SURFACE OWNER MICHAEL R. BRITTON & ANGELA D. PRATT ACREAGE 136.56 ACRES +/- OIL & GAS ROYALTY OWNER MICHAEL S. FRANCIS ET AL; RICHARD W. MINNIS ET AL; XTO ENERGY INC. FEE; LEASE ACREAGE 173 AC±; 69 AC±; 14.84 AC±; JAMES P. GAINES ET UX; SHIRLEY W. FLEMING; FRANKLIN L. BUTLER; J.S. NETZER ET UX; 200 AC±; 29 AC±; 109 AC±; 85 AC±; WILMER ROLLINS ET UX; A. K. ROLLINS ET UX; BENJAMIN F. HEFLIN ET UX; MELISSA A. CROSS 75 AC±; 40 AC±; 60 AC±; 62.5 AC± PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD-BHL PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,600' TVD 19,700' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

09/02/2022

COUNTY NAME

PERMIT



LATITUDE 39°17'30" 2,241'

LATITUDE 39°17'30" 1,568' TO BOTTOM HOLE

Antero Resources Corporation Well No. Aspen 1H

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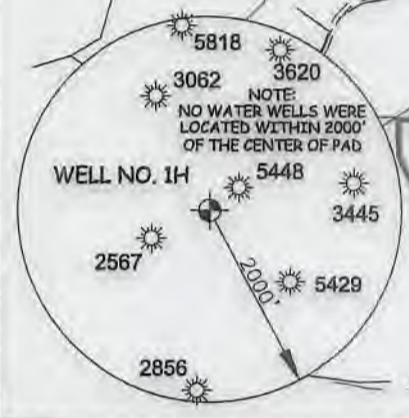
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West Union District
14-02 Alfred Perine
14-03 Gail DeBerry
14-06 Lisa Meyer
14-07 Dennis Hayes
14-09 Marvin Rollins
14-16 Glenn Whitehair
14-17 Mark Smith
14-18 Michael Algranelli
14-19.1 Richard Leggett
14-19.3 Richard Leggett
14-19.4 Richard Leggett
14-20 Mary Nesler
15-01 Darryl Harris
15-11 Roger Barton
15-02 Darryl Harris
15-06 Coastal Forest Resources Co
15-6.1 Doddridge County Board of Education
15-09 Coastal Forest Resources Co
15-10 Coastal Forest Resources Co
15-11 Coastal Forest Resources Co
15-12 Drexelene Perrine
15-12.1 Michael Wilkinson
15-12.2 Michael Wilkinson
15-12.4 John Trent
15-13 Loren Smith
15-14 Kenneth Hughes
15-16 Glode Perine
15-09 Donald Perine
19-10 EQM Gathering OPGO LLC
19-15 Michael Britton
19-23.2 Russell Nelson
19-23.1 Arnolda Creek US Church
20-02 Michael Wilkinson
20-03 Loren Smith
20-04 EQM Gathering OPGO LLC
20-05 Loren Smith
20-08 Loren Smith
20-8.1 Jessie Vanscoy
20-09 Loren Smith
20-11 Diane Bennett
20-12 CHG Transmission Corp.
20-13 Loren Smith
20-14 Mary Sechrist

WV NORTH ZONE GRID NORTH

4,620' TO BOTTOM HOLE

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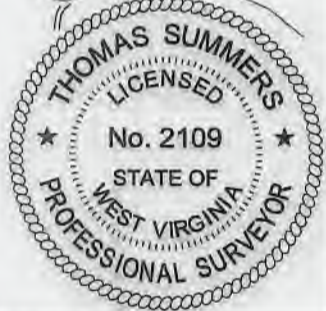


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STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

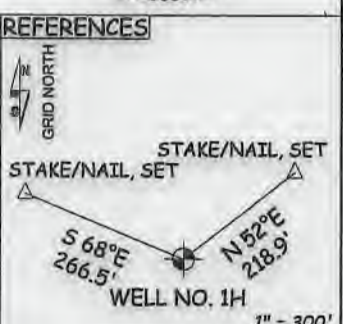
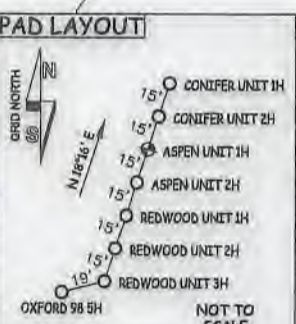
WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415



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 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

**LEGEND**  
 ——— Surface Owner Boundary Lines +/-  
 - - - - - Adjoining Surface Tracts +/-  
 ⊕ Found monument, as noted

*Thomas Summers*  
 THOMAS SUMMERS P.S. 2109



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

DATE 08/04/22  
 OPERATOR'S WELL# ASPEN 1H

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  47 - 017 - 06926 Mob  
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW  STATE COUNTY PERMIT  
 LOCATION: ELEVATION 1,120' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK  
 QUADRANGLE WEST UNION 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE  
 SURFACE OWNER MICHAEL R. BRITTON & ANGELA D. PRATT ACREAGE 136.56 ACRES +/-  
 OIL & GAS ROYALTY OWNER MICHAEL S. FRANCIS ET AL; RICHARD W. MINNIS ET AL; XTO ENERGY INC. FEE; LEASE ACREAGE 173 AC±; 69 AC±; 14.84 AC±;  
 JAMES P. GAINES ET UX; SHIRLEY W. FLEMING; FRANKLIN L. BUTLER; J.S. NETZER ET UX; 200 AC±; 29 AC±; 109 AC±; 85 AC±;  
 WILMER ROLLINS ET UX; A. K. ROLLINS ET UX; BENJAMIN F. HEFLIN ET UX; MELISSA A. CROSS 75 AC±; 40 AC±; 60 AC±; 62.5 AC±  
 PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD-BHL  
 TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG  
 WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 6,600' TVD 19,700' MD  
 ADDRESS 1615 WYNKOOP ST. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
 DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

09/02/2022

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
<b><u>Michael S. Francis, et al Lease</u></b>			
Michael S. Francis, et al	Key Oil Company	1/8	0106/0273
Key Oil Company	Columbia Gas Transmission Corporation	Assignment	0115/0436
Columbia Gas Transmission Corporation	Columbia Natural Resources Inc	Assignment	0161/0068
Columbia Natural Resources Inc	Columbia Natural Resources LLC	Name Change	0256/0588
Columbia Natural Resources LLC	Chesapeake Appalachia LLC	Merger	0264/0447
Chesapeake Appalachia LLC	CNX Gas Company	Assignment	0372/0585
CNX Gas Company	Antero Resources Corporation	Assignment	0387/0216
<b><u>Richard W. Minnis, et al Lease</u></b>			
Richard W. Minnis, et al	Consolidated Gas Supply Corporation	1/8	0095/0706
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Development Company	Assignment	0139/0041
CNG Development Company	Dominion Exploration & Production Inc	Name Change	WV SOS
Dominion Exploration & Production Inc	Dominion Transmission Inc	Assignment	0244/0528
Dominion Transmission Inc	CONSOL Gas Company	Name Change	0292/0469
CONSOL Gas Company	CNX Gas Company, LLC	Name Change	0293/0252
CNX Gas Company	Antero Resources Corporation	Assignment	0325/0507
<b><u>XTO Energy Inc. (Fee) Lease</u></b>			
XTO Energy Inc. Fee	Antero Resources Corporation		Elected to Participate
<b><u>James P. Gaines, et ux</u></b>			
James P. Gaines, et ux	Hope Natural Gas Company	1/8	0022/0228
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Assignment	0332/0563
CNG Transmission Corporation	Dominion Transmission Inc	Assignment	0332/0570
Dominion Transmission Inc	CNX Gas Company, LLC	Assignment	0325/0517
CNX Gas Company, LLC	Antero Resources Corporation	Assignment	0628/0257
<b><u>Shirley W. Fleming Lease</u></b>			
Shirley W. Fleming	Key Oil Company	1/8	0107/0313
Key Oil Company	J&J Enterprises, Inc	Assignment	0111/0326
J&J Enterprises, Inc	Eastern American Energy Corporation	Merger	0211/0137
Eastern American Energy Corporation	Energy Corporation of America	Merger	0283/0431
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0272/0307
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523
<b><u>Franklin L. Butler Lease</u></b>			
Franklin L. Butler	Key Oil Company	1/8	0195/0445
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523

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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
<b><u>J.S. Netzer, et ux Lease</u></b>			
J.S. Netzer, et ux	Hope Natural Gas Company	1/8	0035/0362
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Development Company	Assignment	0139/0041
CNG Development Company	Dominion Exploration & Production Inc	Name Change	WV SOS
Dominion Exploration & Production Inc	Dominion Transmission Inc	Assignment	0244/0528
Dominion Transmission Inc	CONSOL Gas Company	Name Change	0292/0469
CONSOL Gas Company	CNX Gas Company, LLC	Name Change	0293/0252
<b>CNX Gas Company, LLC</b>	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>0628/0257</b>
<b><u>Wilmer Rollins, et ux Lease</u></b>			
Wilmer Rollins, et ux	C.H. Pigott	1/8	0031/0431
C.H. Pigott	Murphey Oil Company	Assignment	0040/0443
Murphey Oil Company	Dilmur Oil Company	Assignment	0091/0742
Dilmur Oil Company	Targa Development, Inc	Assignment	0165/0428
Targa Development, Inc	Antero Resources Corporation	Assignment	0257/0362
Antero Resources Corporation	CNX Gas Company	Assignment	0411/0160
<b>CNX Gas Company</b>	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>0387/0180</b>
<b><u>A.K. Rollins, et ux Lease</u></b>			
A.K. Rollins, et ux	C.H. Pigott	1/8	0031/0433
C.H. Pigott	Murphey Oil Company	Assignment	0040/0443
Murphey Oil Company	Dilmur Oil Company	Assignment	0091/0742
Dilmur Oil Company	Targa Development, Inc	Assignment	0165/0428
Targa Development, Inc	Antero Resources Corporation	Assignment	0257/0362
Antero Resources Corporation	CNX Gas Company	Assignment	0411/0160
<b>CNX Gas Company</b>	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>0387/0180</b>
<b><u>Benjamin F. Heflin, et ux Lease</u></b>			
Benjamin F. Heflin, et ux	C.H. Pigott	1/8	0042/0382
C.H. Pigott	Eastern American Energy Corporation	Assignment	0174/0070
Eastern American Energy Corporation	Energy Corporation of America	Assignment	0240/0498
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0272/0370
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>0046/0523</b>

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**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<b>Melissa A. Cross Lease</b>				
	Melissa A. Cross	Key Oil Company	1/8	0217/0538
	Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0256/0285
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523

\*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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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: Max Green   
Its: VP of Land 

*Execution Version*

June 27, 2022

Jarred Detweiler  
EQT Production Company  
EQT Plaza  
625 Liberty Avenue, Suite 1700  
Pittsburgh, PA 15222

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**RE: Permission to Permit and Drill**

Doddridge County, West Virginia

Dear Mr. Detweiler,

Antero Resources Corporation ("**Antero**") hereby requests permission from EQT Production Company ("**EQT**") to proceed with Antero's plans to drill one or more horizontal wells in, under, and through certain properties subject to oil and gas interests owned or controlled by EQT located in Doddridge County, West Virginia, as more particularly described on Exhibit A to this letter agreement (the "**O&G Interests**"), and insofar and only insofar as to the Marcellus Rights (the "**Properties**"), pursuant to the terms and conditions of this letter agreement. Antero and EQT are currently parties to an Acreage Trade Agreement dated December 17, 2021 (as amended from time to time, the "**Trade Agreement**"), which includes the Properties. Capitalized terms not otherwise defined herein shall have the meanings ascribed to them in the Trade Agreement.

In order to generate mutual goodwill between EQT and Antero, and for one hundred dollars (\$100.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, subject to the terms and conditions of this letter agreement and the Trade Agreement, EQT hereby grants Antero the right to apply for and obtain all applicable governmental permits for the drilling of one or more wellbore laterals in, under, and through the Properties (collectively, "**Wells**") and to drill, complete and produce such Wells.

In the event that Antero and EQT do not consummate the Closing of the Trade Agreement with respect to a Property, then Antero shall have the right to elect to enter into with EQT one (1) or more mutually-agreed joint operating agreements (with each contract area covering a unit) with respect to such Properties, effective as of the date hereof and in each case subject to the terms and conditions of the Trade Agreement.

Antero hereby agrees to release, protect, indemnify, defend and hold harmless EQT from and against any claims, expenses, damages, injuries, claims or obligations or liabilities (including reasonable attorneys' fees) that may be brought by any third party against EQT or its Affiliates to the extent arising out of Antero's drilling or other operations pursuant to this letter agreement and that arise on or after the date of this letter agreement through the Expiration Date (as defined below). This paragraph shall survive (a) the Closing and the assignment or lease, as applicable,

related to the Properties, (b) the execution of a mutually-agreed joint operating agreement with respect to any Properties, or (c) any termination of all or any part of this letter agreement.

Nothing in this letter agreement will diminish any current or future rights of EQT in the Properties or other properties. This letter agreement and the rights and obligations of EQT and Antero hereunder will terminate (on a Property-by-Property basis) upon the earliest of (I) the execution of a mutually-agreed joint operating agreement with respect to such Property, (II) if and when Antero and EQT consummate the Closing of the Trade Agreement with respect to such Property and (III) the date this letter agreement terminates with respect to such Property as provided in the Trade Agreement. (“*Expiration Date*”).

If the above meets your approval, please execute in the space provided below and return one signed copy to the letterhead address. Should you have any questions, please contact Jared Hurst at (303) 357-6835.

*[Signature Pages Follow.]*


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Sincerely,

**ANTERO RESOURCES CORPORATION**

By:  JKH  
Name: Brian Kuhn  
Title: Senior Vice President – Land

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*Signature Page to Letter Agreement*

09/02/2022

Sincerely,

**ANTERO RESOURCES CORPORATION**

By: \_\_\_\_\_

Name: Brian Kuhn

Title: Senior Vice President – Land

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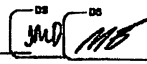
*Signature Page to Letter Agreement*

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AGREED TO AND ACCEPTED:

**EQT PRODUCTION COMPANY**

By:  

Name: Corey C. Peck

Title: Authorized Agent

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*Signature Page to Letter Agreement*

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**EXHIBIT A  
PROPERTIES**

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Exhibit A  
Phytocides



Lease No.	HO#	Owner	Operator	Lease Date	Lease Gross Acres	Completed Per- Acres	Symbol Treatment	MS	25%	% Covered 242 Date	State	County	Section	Block	Tract	Uncovered Acres	Acres Covered	Full Case Number Lease	Apud State Assessment	Apud Year	Apud 75% Date
Lease	HBP	Levin Maxwell Mine	D. H. Swan	4/6/1905	640.0000	87.6000	0.1250	100%	0.8750	15/8/18	WV	Douglas	West Union	23	344	9/18/14-20					Exhibit A-1 Part 2-43
Lease	HBP	Levin Maxwell Mine	D. H. Swan	3/1/1909	95.0000	29.3750	0.1150	100%	0.8750	15/8/18	WV	Douglas	West Union	22	430	9/18/14-20					Exhibit A-1 Part 2-48
Lease	HBP	Levin Maxwell and Sarah Maxwell	P. H. Colby	8/4/1869	1542.0000	26.8650	0.1250	100%	0.8750	15/7/21	WV	Douglas	West Union	11	479	9/18/14-21					Exhibit A-1 Part 2-49

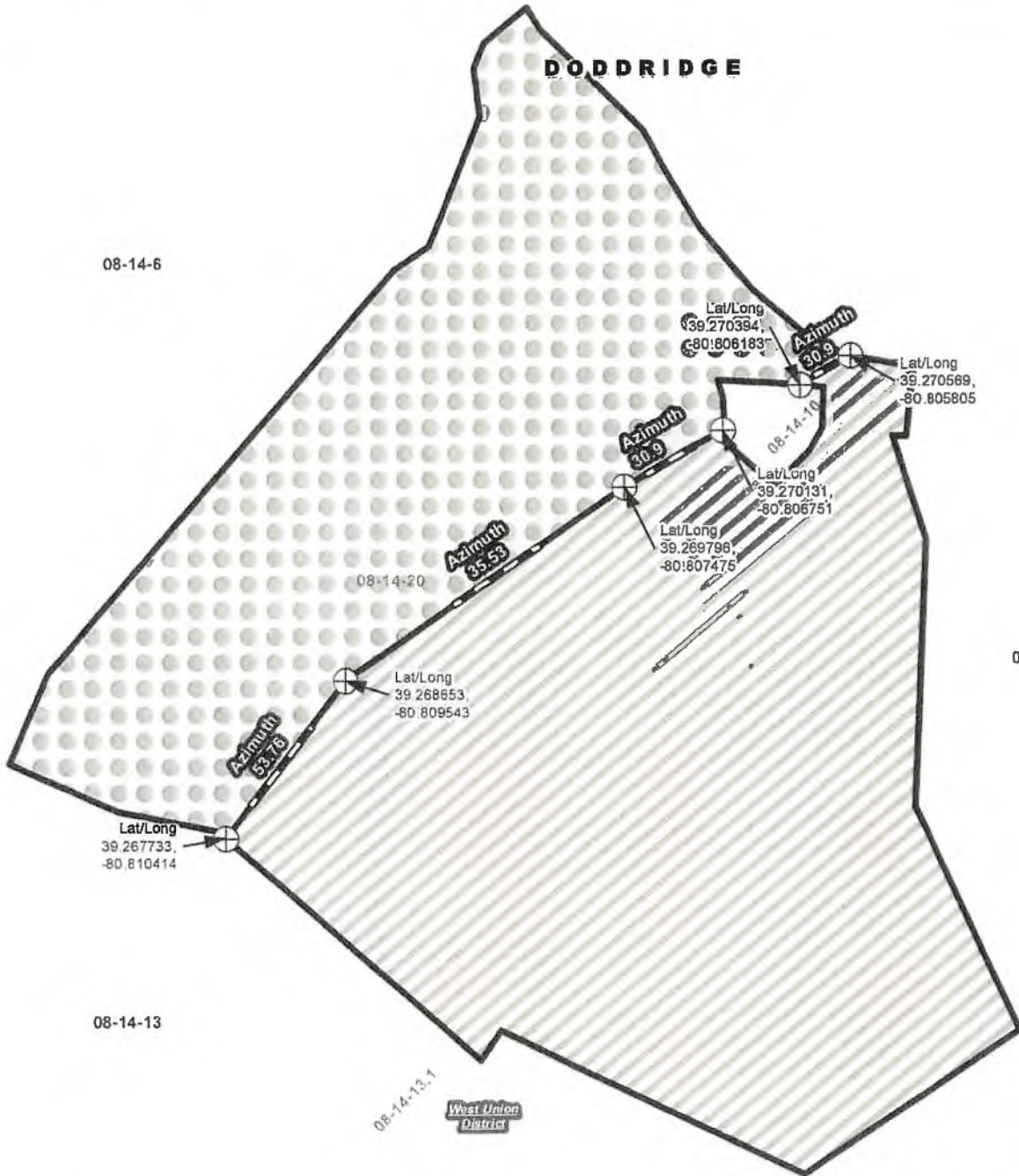
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Environmental Protection

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# EXHIBIT A-1-Part 2-48


### EQT to Antero Split Tract

-  Conveyed: 35.2 Gross Acres
-  Retained: 23.95 Gross Acres



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08-14-17



**Appalachian Basin**  
EXHIBIT A-1-Part 2-48

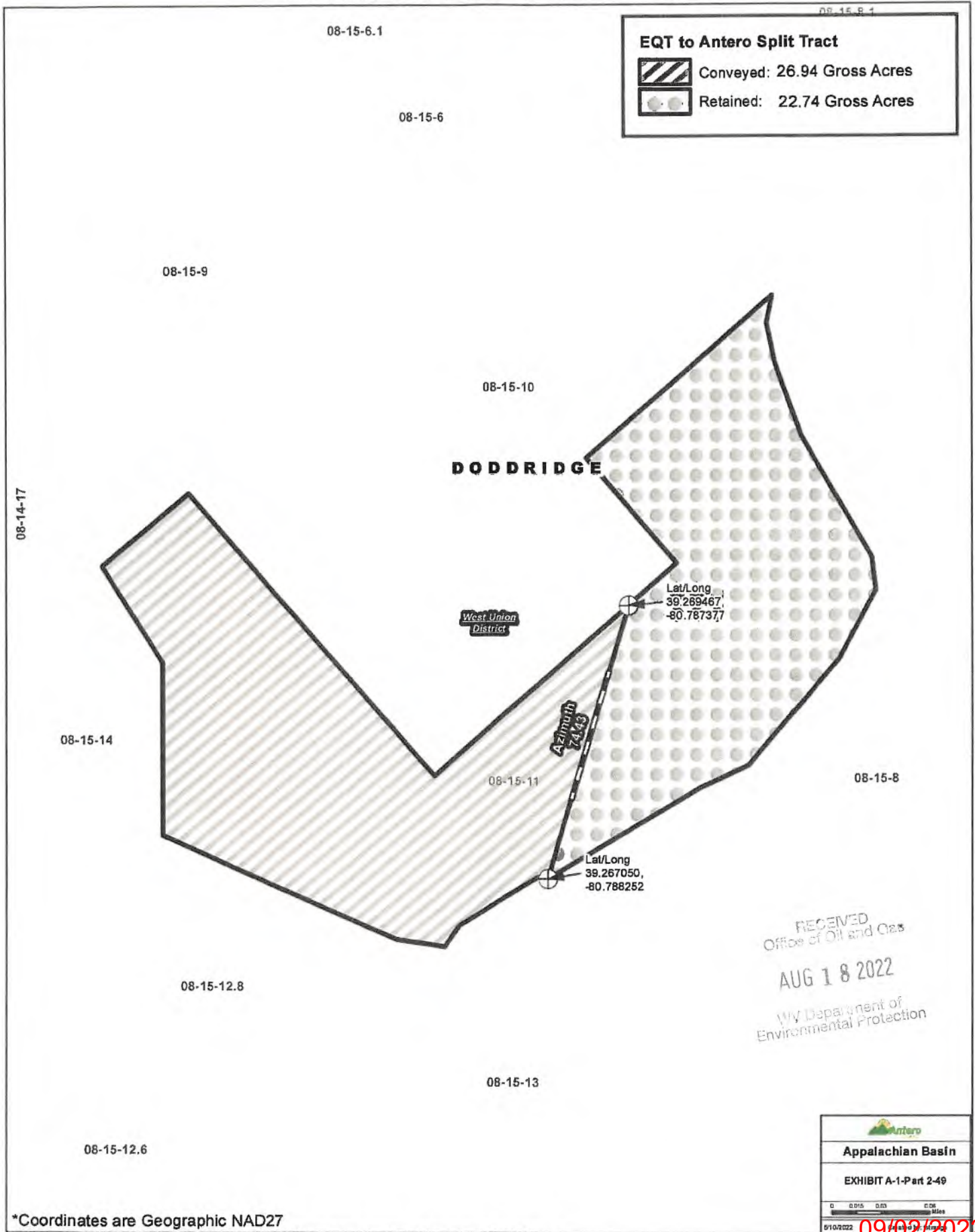
0 0.0125 0.025 0.05 Miles

5/10/2022

\*Coordinates are Geographic NAD27

09/02/2022

# EXHIBIT A-1-Part 2-49



\*Coordinates are Geographic NAD27

**Certificate Of Completion**

Envelope Id: D27A6D562899468EBEF30E964786A1E4

Status: Completed

Subject: Please DocuSign: (Antero-EQT) Permission to Antero to Permit and Drill Execution Version 6.27.2...

Source Envelope:

Document Pages: 8

Signatures: 1

Envelope Originator:

Certificate Pages: 2

Initials: 2

Jarred Detweiler

AutoNav: Enabled

625 Liberty Ave Ste 1700

EnvelopeId Stamping: Enabled

Pittsburgh, PA 15222

Time Zone: (UTC-05:00) Eastern Time (US & Canada)

jdetweiler@eqt.com

IP Address: 47.133.146.76

**Record Tracking**

Status: Original

Holder: Jarred Detweiler

Location: DocuSign

6/26/2022 2:56:01 PM

jdetweiler@eqt.com

**Signer Events**

Jarred Detweiler

jdetweiler@eqt.com

Landman IV

EQT Corporation

Security Level: Email, Account Authentication (None)

**Signature**



**Timestamp**

Sent: 6/26/2022 2:58:32 PM

Viewed: 6/26/2022 2:58:42 PM

Signed: 6/26/2022 2:58:48 PM

Signature Adoption: Pre-selected Style  
Signed by link sent to jdetweiler@eqt.com  
Using IP Address: 136.226.49.8

Electronic Record and Signature Disclosure:  
Not Offered via DocuSign

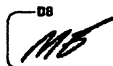
Matt Eller

meller@eqt.com

Land BD Director

EQT Corporation

Security Level: Email, Account Authentication (None)



Sent: 6/26/2022 2:58:49 PM

Viewed: 6/26/2022 7:17:57 PM

Signed: 6/26/2022 7:18:12 PM

Signature Adoption: Pre-selected Style  
Signed by link sent to meller@eqt.com  
Using IP Address: 73.174.81.247  
Signed using mobile

Electronic Record and Signature Disclosure:  
Not Offered via DocuSign

Corey C Peck

cpeck@eqt.com

Managing Director - Land Ops

EQT Corporation

Security Level: Email, Account Authentication (None)



Sent: 6/26/2022 7:18:13 PM

Viewed: 6/26/2022 7:58:11 PM

Signed: 6/26/2022 7:58:24 PM

Signature Adoption: Uploaded Signature Image  
Signed by link sent to cpeck@eqt.com  
Using IP Address: 71.206.252.2  
Signed using mobile

Electronic Record and Signature Disclosure:  
Not Offered via DocuSign

**In Person Signer Events**

**Signature**

**Timestamp**

**Editor Delivery Events**

**Status**

**Timestamp**

**Agent Delivery Events**

**Status**

**Timestamp**

**Intermediary Delivery Events**

**Status**

**Timestamp**

**Certified Delivery Events**

**Status**

**Timestamp**

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**Carbon Copy Events**

**Status**

**Timestamp**

**Witness Events**

**Signature**

**Timestamp**

**Notary Events**

**Signature**

**Timestamp**

**Envelope Summary Events**

**Status**

**Timestamps**

Envelope Sent

Hashed/Encrypted

6/26/2022 2:58:32 PM

Certified Delivered

Security Checked

6/26/2022 7:58:11 PM

Signing Complete

Security Checked

6/26/2022 7:58:24 PM

Completed

Security Checked

6/26/2022 7:58:24 PM

**Payment Events**

**Status**

**Timestamps**

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ck# 40/2200  
\$5,000



August 17, 2022

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
Attn: Mr. Taylor Brewer  
601 57<sup>th</sup> Street  
Charleston, WV 25304

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

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modification for approved well on the existing Oxfd 98 Pad: Aspen Unit 1H, Redwood Unit 1H- 3H. The Redwood Unit 3H will drill near the Wentz Unit 1H and 2H. We have submitted as-drilled plats of these wells. These wells were not cased or produced to TD. Wentz Unit 1H is cased to 12,892' and a fish is left in the hole to 14,875'. Wentz Unit 2H is cased to 14,933' and a fish left at 17,040'. We don't for see any anti-collision issues with these wells. Just wanted to clear this up because just looking at the as-drilled plats it could look close.

Attached you will find the following:

- Revised Form WW-6B
- Revised Form WW-6A1
- Revised Mylar Plat
- AOR

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 that reads "Mallory Stanton". The signature is written in a cursive style with a long horizontal stroke extending to the right.

Mallory Stanton  
Permitting Supervisor  
Antero Resources Corporation

Enclosures

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Stansberry, Wade A &lt;wade.a.stansberry@wv.gov&gt;

---

**Expedited Modification Horizontal H6A Well Work Permits API: (47-017-06926, 06930, 06931, 06932)**

1 message

**Stansberry, Wade A** <wade.a.stansberry@wv.gov>

Tue, Aug 30, 2022 at 10:51 AM

To: Mallory Stanton &lt;mstanton@anteroresources.com&gt;, Diane Blair &lt;dblair@anteroresources.com&gt;, Dani DeVito &lt;ddevito@shalepro.com&gt;, "Blevins, Cragin" &lt;cragin.blevins@wv.gov&gt;, David Sponaugle &lt;dsponaug@assessor.state.wv.us&gt;, "Ward, Samuel D" &lt;samuel.d.ward@wv.gov&gt;

I have attached a copy of the newly issued well [permit](#) numbers:

**47-017-06926 - ASPEN 1H**  
**47-017-06930 - REDWOOD 1H**  
**47-017-06931 - REDWOOD 2H**  
**47-017-06932 - REDWOOD 3H**

These will serve as your copy.

Thank you,

**Wade A. Stansberry**

**Environmental Resource Specialist 3**

**West Virginia Department of Environmental Protection**

**Office of Oil & Gas**

**601 57th St. SE**

**Charleston, WV 25304**


**(304) 926-0499 ext. 41115**


**(304) 926-0452 fax**


**[Wade.A.Stansberry@wv.gov](mailto:Wade.A.Stansberry@wv.gov)**


---

**4 attachments**

 **47-017-06926 - mod.pdf**  
1635K

 **47-017-06930 - mod.pdf**  
997K

 **47-017-06931 - mod.pdf**  
989K

 **47-017-06932 - mod.pdf**  
1058K

**09/02/2022**