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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)

Thursday, December 9, 2021  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
DENVER, CO 80202

Re: Permit approval for DRY RUN 5H  
47-095-02764-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

A blue ink signature of James A. Martin, Chief, is written over the text.

James A. Martin  
Chief

Operator's Well Number: DRY RUN 5H  
Farm Name: DAVID E BOWYER  
U.S. WELL NUMBER: 47-095-02764-00-00  
Horizontal 6A New Drill  
Date Issued: 12/9/2021

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

### CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

## PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).

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

1) Well Operator: Antero Resources Corporation

<u>494507062</u>	<u>095 - Tyler</u>	<u>Lincoln</u>	<u>Paden City 7.5'</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: Dry Run Unit 5H Well Pad Name: Dry Run Pad

3) Farm Name/Surface Owner: David E. Bowyer Public Road Access: CR 18/12

4) Elevation, current ground: 1026' Elevation, proposed post-construction: 1009'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6700' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6,700' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 6,700' MD

11) Proposed Horizontal Leg Length: 0'

12) Approximate Fresh Water Strata Depths: 382'

13) Method to Determine Fresh Water Depths: Offset well 4709500275 . Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1349' (reference well 4709502312)

15) Approximate Coal Seam Depths: None Anticipated

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: \_\_\_\_\_

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	H-40	94#	90	90	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	432	432	CTS, 600 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#	6700	6700	1330 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*Byron Ham*  
11-10-21

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
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	9300	Lead HPOZ 5, 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			



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.

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): 22.58 acres

22) Area to be disturbed for well pad only, less access road (acres): 9.77 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:

\*Note: Attach additional sheets as needed.



4709502764

# Dry Run Pad

  
Dry Run Unit 5H

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Updated 10/19/21

Not to Scale

12/10/2021

WW-9  
(4/16)

API Number 47 - 085 - 02764  
Operator's Well No. Dry Run Unit 5H

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 484507062

Watershed (HUC 10) Outlet Middle Island Creek Quadrangle Paden City 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: No pit will be used at this site (Chiling and Flowback Fluids will be stored in tanks. Cuttings will be landed and hauled off site.)

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC Permit # will be provided on Form WR-34 )
- Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-34 )
- Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain Northwestern Landfill Permit #SWF-1025/WV0109410)

Will closed loop system be used? If so, describe: Yes, fluids stored in tanks, cuttings removed offsite and taken to landfill.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Oil/Solids, Production - Water Based Mud or Synthetic Based Mud

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? Please See Attachment

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Drill cuttings stored in tanks, removed offsite and taken to landfill.

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-98), Northwestern Landfill (Permit # SWF-1025/WV0109410)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Gretchen Kohler

Company Official (Typed Name) Gretchen Kohler

Company Official Title Director, Environmental and Regulatory Compliance

Subscribed and sworn before me this 3rd day of November, 2021

Diane Blair Notary Public

My commission expires 27 Apr 2024



12/10/2021



Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 22.58 acres Prevegetation pH \_\_\_\_\_

Lime 2-4 Tons/acre or to correct to pH 6.5

Fertilizer type Hay or straw or Wood Fiber (will be used where needed)

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road "A" (9.18 acres) + Access Road "B" (2.59 acres) + Staging Area (0.41) + Well Pad (13.44 acres) + Excess/Topsail Material Stockpiles (26.03 acres) = 51.65 Acres

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
Field Bromegrass	40	Tall Fescue	30
See attached Table IV-3 for additional seed type (Margery Pad Design)		See attached Table IV-4A for additional seed type (Margery Pad Design)	
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Dustin Harris

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Inspector Date: 11-10-21

Field Reviewed? ( ) Yes ( X ) No

**Form WW-9 Additives Attachment****SURFACE INTERVAL**

1. Fresh Water
2. Soap –Foamer AC
3. Air

**INTERMEDIATE INTERVAL****STIFF FOAM RECIPE:**

- 1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
- 2) 1 ppb Conqor 404 ( 11.76 ppg) / Corrosion Inhibitor
- 3) 4 ppb KLA-Gard ( 9.17 ppg) / Amine Acid Complex-Shale Stabilizer
- 4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
- 5) 12 ppb KCL / Potassium Chloride-inorganic Salt
- 6) Fresh Water 80 bbls
- 7) Air

**PRODUCTION INTERVAL**

1. Alpha 1655  
Salt Inhibitor
2. Mil-Carb  
Calcium Carbonate
3. Cottonseed Hulls  
Cellulose-Cottonseed Pellets – LCM
4. Mil-Seal  
Vegetable, Cotton & Cellulose-Based Fiber Blend – LCM
5. Clay-Trol  
Amine Acid Complex – Shale Stabilizer
6. Xan-Plex  
Viscosifier For Water Based Muds
7. Mil-Pac (All Grades)  
Sodium Carboxymethylcellulose – Filtration Control Agent
8. New Drill  
Anionic Polyacrylamide Copolymer Emulsion – Shale Stabilizer
9. Caustic Soda  
Sodium Hydroxide – Alkalinity Control
10. Mil-Lime  
Calcium Hydroxide – Lime
11. LD-9  
Polyether Polyol – Drilling Fluid Defoamer
12. Mil Mica  
Hydro-Biotite Mica – LCM

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13. Escaid 110  
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco  
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep  
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K  
Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous  
Inorganic Salt
18. D-D  
Drilling Detergent – Surfactant
19. Terra-Rate  
Organic Surfactant Blend
20. W.O. Defoam  
Alcohol-Based Defoamer
21. Perma-Lose HT  
Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D  
Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells  
Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite  
Natural Graphite – LCM
25. Mil Bar  
Barite – Weighting Agent
26. X-Cide 102  
Biocide
27. Soda Ash  
Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol  
Amine Acid complex – Shale Stabilizer
29. Sulfatrol  
Sulfonated Asphalt – Shale Control Additive
30. Xanvis  
Viscosifier For Water-Based Muds
31. Milstarch  
Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube  
Drilling Fluid Lubricant

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12/10/2021



207 Dry Run Road  
Sisterville, WV 26175

## Well Site Safety Plan Antero Resources

**Well Name:** DRY RUN UNIT 5H

**Pad Location:** DRY RUN PAD

Tyler County/Lincoln District

**GPS Coordinates:**

**Entrance** - Lat 39.548653' / Long -80.907797' (NAD83)

**Pad Center** - Lat 39.551682' / Long -80.911389' (NAD83)

**Driving Directions:**

From WV-18: Turn right onto CO 18/5 (Dry Run Road) and travel for 0.6 miles. Continue straight onto CO 18/12 for 0.3 miles. Lease road entrance is on the left.

**Alternate Route:**

From WV-18, turn right onto CO 18/5 (Dry Run Rd) and travel for 0.6 miles. Continue straight onto CO 18/12 and travel for 0.3 miles. The Dry Run Lease Road will be on the left.

**EMERGENCY (24 HOUR) CONTACT 1-800-878-1373**





# Well Site Safety Plan

## Antero Resources

*Stephen Harris*  
11-10-21

**Well Name: DRY RUN UNIT 5H**

**Pad Location: DRY RUN PAD**

Tyler County/Lincoln District

### GPS Coordinates:

**Entrance** - Lat 39.548653' / Long -80.907797' (NAD83)

**Pad Center** - Lat 39.551682' / Long -80.911389' (NAD83)

### Driving Directions:

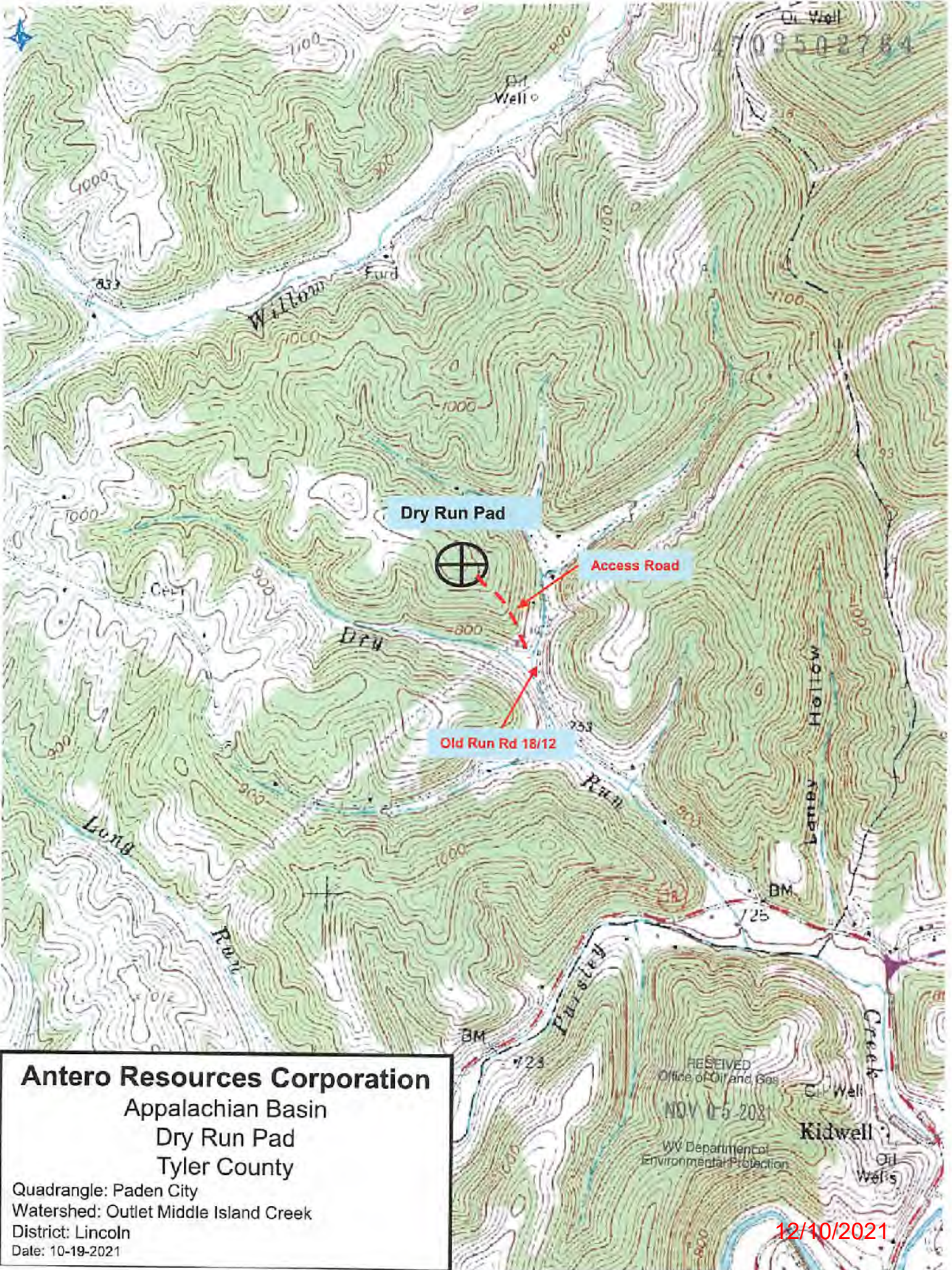
From WV-18: Turn right onto CO 18/5 (Dry Run Road) and travel for 0.6 miles. Continue straight onto CO 18/12 for 0.3 miles. Lease road entrance is on the left.

### Alternate Route:

From Junction of I-79 and US-50 W: Head southwest onto US-50. Turn left onto Old US 50 E/ Sunnyside Road Turn left onto CR 21/Oxford Road. Continue to South Fork Hughes River Road. Continue onto Harris-Pullman Oxford Road. Turn Left on to White Oak Road. Turn Right onto CR 22/3. Access road entrance is on the left.

**EMERGENCY (24 HOUR) CONTACT 1-800-878-1373**



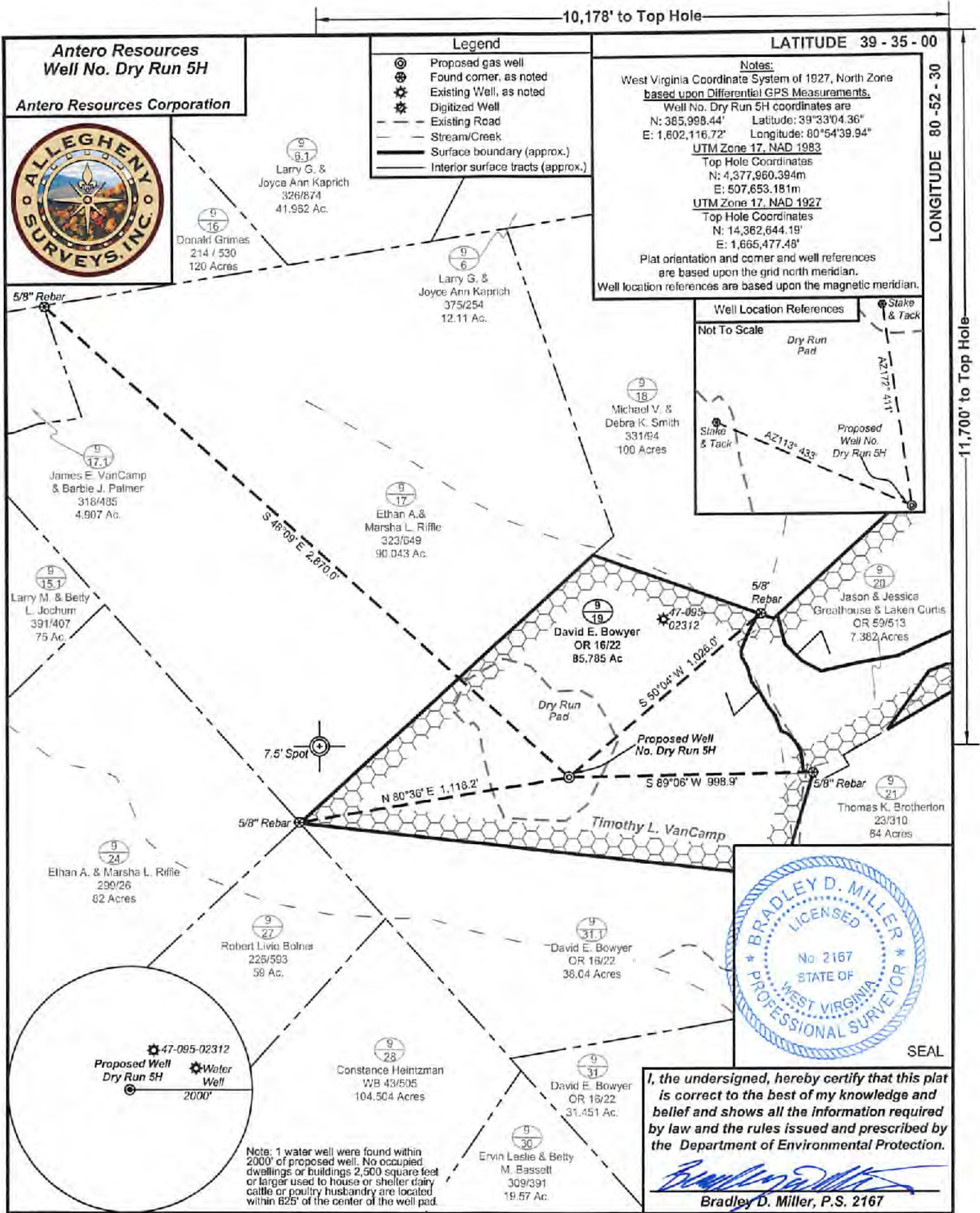


**Antero Resources Corporation**  
Appalachian Basin  
Dry Run Pad  
Tyler County

Quadrangle: Paden City  
Watershed: Outlet Middle Island Creek  
District: Lincoln  
Date: 10-19-2021

12/10/2021





FILE NO: 20-54-L-18  
 DRAWING NO: Dry Run 5H Well Plat  
 SCALE: 1" = 500'  
 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: October 8 2021  
 OPERATOR'S WELL NO. Dry Run 5H  
 API WELL NO H6A  
47 - 95 - 02164  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Proposed 1,009' Existing 1,026' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Paden City  
 DISTRICT: Lincoln COUNTY: Tyler 12/10/2021  
 SURFACE OWNER: David E. Bowyer ACREAGE: 85.785  
 ROYALTY OWNER: Timothy VanCamp LEASE NO: \_\_\_\_\_ ACREAGE: 93.167  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,700' TVD  
6,700' 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



10,178' to Top Hole

**Antero Resources**  
Well No. Dry Run 5H  
**Antero Resources Corporation**

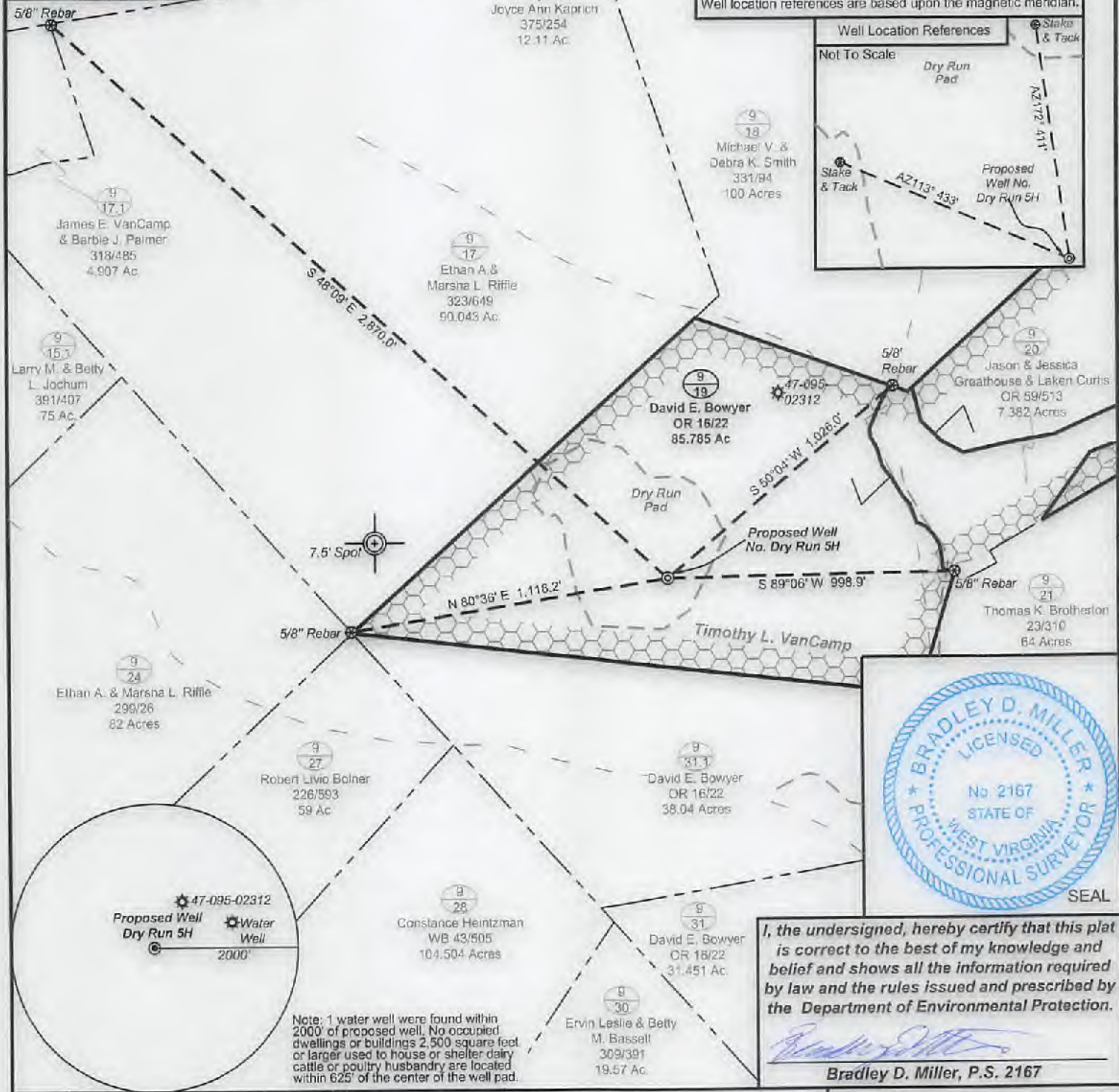


- Legend**
- ⊙ Proposed gas well
  - ⊛ Found corner, as noted
  - ⊙ Existing Well, as noted
  - ⊙ Digitized Well
  - - - Existing Road
  - - - Stream/Creek
  - - - Surface boundary (approx.)
  - - - Interior surface tracts (approx.)

**LATITUDE 39 - 35 - 00**

**Notes:**  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Dry Run 5H coordinates are  
N: 385,998.44' Latitude: 39°33'04.36"  
E: 1,602,116.72' Longitude: 80°54'39.94"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates  
N: 4,377,960.394m  
E: 507,653.181m  
UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N: 14,362,644.19'  
E: 1,665,477.48'  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.

LONGITUDE 80 - 52 - 30



11,700' to Top 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 prescribed by the Department of Environmental Protection.*

*Bradley D. Miller*  
**Bradley D. Miller, P.S. 2167**

FILE NO: 20-54-L-18  
DRAWING NO: Dry Run 5H Well Plat  
SCALE: 1" = 500'  
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: October 8 2021  
OPERATOR'S WELL NO. Dry Run 5H  
API WELL NO. ~~WGA~~  
47 - 95 - 02764  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: Proposed 1,009' Existing 1,026' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Paden City  
DISTRICT: Lincoln COUNTY: Tyler **12/10/2021**  
SURFACE OWNER: David E. Bowyer ACREAGE: 85.785  
ROYALTY OWNER: Timothy VanCamp LEASE NO: ACREAGE: 93.167  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,700' MD. 6,700' TVD

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



WW-6A1  
(5/13)

Operator's Well No. Dry Run Unit 5H

**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
Timothy L. Vancamp Lease				
	Timothy L. Vancamp	Chesapeake Appalachia, LLC	1/8	0354/0704
	Chesapeake Appalachia, LLC	Statoil USA Onshore Properties, Inc	Assignment	0423/0152
	Statoil USA Onshore Properties, Inc	EQT Production Company	Assignment	0539/0239
	EQT Production Company	Antero Resources Corporation	Assignment	0134/0172

\*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

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, repeals, 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



Antero Resources  
1615 Wynkoop St.  
Denver, CO 80202  
Office: 303.357.7310  
Fax: 303.357.7315

October 28, 2021

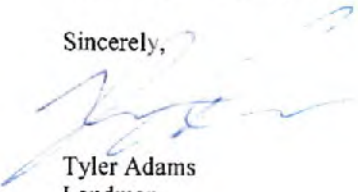
West Virginia Department of Environmental Protection  
Chief, Office of Oil and Gas  
Attn: Mr. James Martin  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

RE: Dry Run Unit 5H  
Quadrangle: Paden City 7.5'  
Tyler County/Lincoln District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Dry Run Unit 5H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Dry Run Unit 5H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,



Tyler Adams  
Landman

12/10/2021

NOV 05 2021

4709502764

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION

Date of Notice Certification: 11/04/2021

API No. 47- 095 -

Operator's Well No. Dry Run Unit 5H

Well Pad Name: Dry Run Pad

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>507,653m</u>
County: <u>Tyler</u>		Northing: <u>4,377,960m</u>
District: <u>Lincoln</u>	Public Road Access: <u>CR 18/12</u>	
Quadrangle: <u>Paden City</u>	Generally used farm name: <u>David E. Boyer</u>	
Watershed: <u>Outlet Middle Island Creek</u>		

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

<p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
--	---

**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

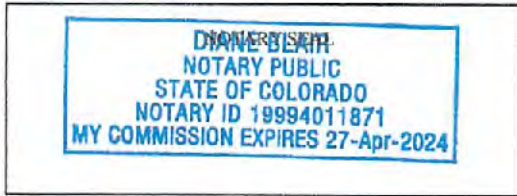
12/10/2021

**Certification of Notice is hereby given:**

THEREFORE, I Diana Hoff, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Antero Resources Corporation  
By: Diana Hoff *Diana O. Hoff*  
Its: Sr VP of Operations  
Telephone: 304-842-4153

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7315  
Email: mhamsher@anteroresources.com



Subscribed and sworn before me this 29 day of Oct 2021.

*Diane Blair* Notary Public

My Commission Expires 27 Apr 2024

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 11/04/2021 Date Permit Application Filed: 11/05/2021

Notice of:

- PERMIT FOR ANY WELL WORK       CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE       REGISTERED MAIL       METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b), no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner.

Notice is hereby provided to:

SURFACE OWNER(s)  
Name: David E. Boyer  
Address: 12088 Middle Island Road  
Alma, WV 26320-7211

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: David E. Boyer  
Address: 12088 Middle Island Road  
Alma, WV 26320-7211

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments/Pits)  
Name: Not Applicable  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: None on record with County  
Address: \_\_\_\_\_

COAL OPERATOR  
Name: None on record with County  
Address: \_\_\_\_\_

WATER PURVEYOR(s)  
Name: See Attachment  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: Not Applicable  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

12/10/2021



**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall also include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments.

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No wellpad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such



factors, if necessary.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

WW-6A  
(5-12)

4709502764

API NO. 47- 085 -  
OPERATOR WELL NO. Dry Run Unit 5H  
Well Pad Name: Dry Run Pad

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

**Notice is hereby given by:**

Well Operator: Antero Resources Corporation Address: 1615 Wynkoop Street  
Telephone: 304-842-4153 Diana O. Hoff Denver, CO 80202  
Email: mhamsher@anteroresources.com Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 29 day of Oct, 2021.  
Diane Blair Notary Public  
My Commission Expires 27 Apr 2024



**WW-6A ATTACHMENT – DRY RUN UNIT 5H**

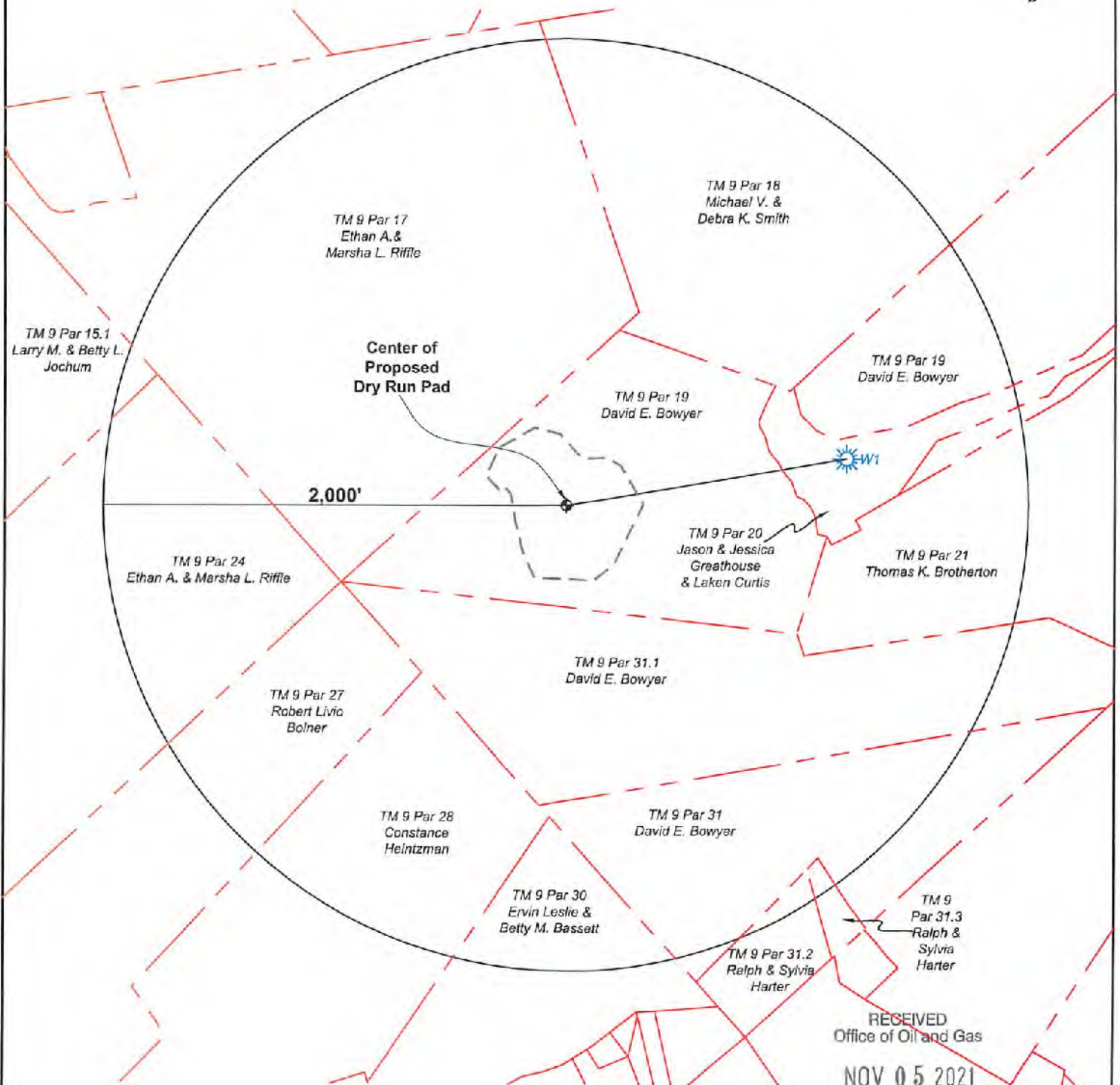
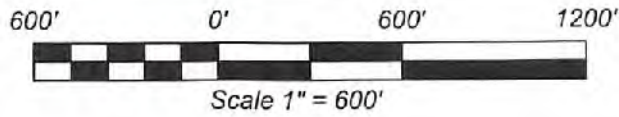
**SURFACE OWNER(S) OF WATER WELL(S) AND/OR WATER PURVEYOR(S):**

**Note: All Water Well Owners listed below own the same, single water well.**

Jason L. and Jessica Greathouse  
7590 Wick Road  
Middlebourne, WV 26149

Laken R. Curtis  
1673 Veterans Highway  
New Martinsville, WV 26155

**Dry Run Drill Pad  
Water Well & Spring Map**



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Office of Oil and Gas

NOV 05 2021

WV Department of  
Environmental Protection

Owners

W1: Jason L. and Jessica Greathouse, 7590 Wick Road, Middlebourne, WV 26149  
Laken R. Curtis, 1673 Veterans Highway, New Martinsville, WV 26155

Tag	Azimuth	Dist.	Latitude	Longitude
W1	Az80°32'	1229.9'	39°33'07.97"	80°54'26.18"

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

**Notice Time Requirement:** Notice shall be provided at least TEN (10) days prior to filing a permit application.

**Date of Notice:** 10/21/2021      **Date Permit Application Filed:** \_\_\_\_\_

**Delivery method pursuant to West Virginia Code § 22-6A-16(b)**

HAND DELIVERY       CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

**Notice is hereby provided to the SURFACE OWNER(s):**

Name: David E. Bowyer  
Address: 12098 Middle Island Road  
Alma, WV 26320-7211

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>507,653m</u>
County:	<u>Tyler</u>		Northing:	<u>4,377,960m</u>
District:	<u>Lincoln</u>	Public Road Access:	<u>Old Run Rd 18/12</u>	
Quadrangle:	<u>Paden City 7.5'</u>	Generally used farm name:	<u>David E. Bowyer</u>	
Watershed:	<u>Outlet Middle Island Creek</u>			

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: Antero Resources Appalachian Corporation  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephone: 303-357-8981  
Email: dblair@anteroresources.com  
Facsimile: 303-357-7315

Authorized Representative: Melissa Hamsher  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephonic: 717-443-7098  
Email: mhamsher@anteroresources.com  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF PLANNED OPERATION**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 11/04/2021      **Date Permit Application Filed:** 11/05/2021

**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

- CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

Name: <u>David E. Boyer</u>	Name: _____
Address: <u>12088 Middle Island Road</u>	Address: _____
<u>Alma, WV 26320-7211</u>	_____

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>507,653m</u>
County: <u>Tyler</u>	Northing: <u>4,377,960m</u>
District: <u>Lincoln</u>	Public Road Access: <u>CR 18/12</u>
Quadrangle: <u>Paden City</u>	Generally used farm name: <u>David E. Boyer</u>
Watershed: <u>Outlet Middle Island Creek</u>	_____

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: <u>Antero Resources Corporation</u>	Address: <u>1615 Wynkoop Street</u>
Telephone: <u>304-842-4153</u>	<u>Denver, CO 80202</u>
Email: <u>mhamsher@anteroresources.com</u>	Facsimile: <u>303-357-7315</u>

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**VOLUNTARY STATEMENT OF NO OBJECTION**

**Instructions to Persons Named on Page WW-6A**

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

**Comment and Waiver Provisions**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

**VOLUNTARY STATEMENT OF NO OBJECTION**

I, David E Boyer, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through \_\_\_\_\_, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>507,653m</u>
County:	<u>Tyler</u>		Northing:	<u>4,377,960m</u>
District:	<u>Lincoln</u>	Public Road Access:		<u>CR 18/12</u>
Quadrangle:	<u>Paden City</u>	Generally used farm name:		<u>David E. Boyer</u>
Watershed:	<u>Outlet Middle Island Creek</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

\*Please check the box that applies

- SURFACE OWNER
- SURFACE OWNER (Road and/or Other Disturbance)
- SURFACE OWNER (Impoundments/Pits)
- COAL OWNER OR LESSEE
- COAL OPERATOR
- WATER PURVEYOR
- OPERATOR OF ANY NATURAL GAS STORAGE FIELD

**FOR EXECUTION BY A NATURAL PERSON**

Signature: David E Boyer  
Print Name: David E Boyer  
Date: 11-16-2021

**FOR EXECUTION BY A CORPORATION, ETC.**

Company: \_\_\_\_\_  
By: \_\_\_\_\_  
Its: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Date: \_\_\_\_\_

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

12/10/2021

# NOTICE OF STATEMENT OF INTENT

The undersigned hereby certifies that the proposed project described below is a project of public interest and that the proposed project is in the public interest and that the proposed project is in the public interest.

The proposed project is a project of public interest and that the proposed project is in the public interest and that the proposed project is in the public interest.

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## STATEMENT OF INTENT

The undersigned hereby certifies that the proposed project described below is a project of public interest and that the proposed project is in the public interest and that the proposed project is in the public interest.

Project Name	Location	Project Description	Project Status
Project A	Location A	Description A	Status A
Project B	Location B	Description B	Status B
Project C	Location C	Description C	Status C

The proposed project is a project of public interest and that the proposed project is in the public interest and that the proposed project is in the public interest.

STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL  
STATE OF NEW YORK

STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL  
STATE OF NEW YORK

STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL  
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STATE OF NEW YORK

STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL  
STATE OF NEW YORK

The proposed project is a project of public interest and that the proposed project is in the public interest and that the proposed project is in the public interest.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

D. Alan Reed, P.E.  
State Highway Engineer

Jimmy Wriston, P. E.  
Secretary of Transportation  
Commissioner of Highways

October 7, 2021

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

RECEIVED  
Office of Oil and Gas

NOV 05 2021

WV Department of  
Environmental Protection

Subject: DOH Permit for the Dry Run Pad, Tyler County  
Dry Run Unit 5H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2021-0458 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off Tyler County Route 18/12 SLS MP 1.68.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

Cc: Melissa Hamsher  
Antero Resources  
CH, OM, D-6  
File



# List of Anticipated Additives Used for Fracturing or Stimulating Well

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	Proprietary
Anionic polymer	Proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	Proprietary
Demulsifier Base	Proprietary
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
Guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	Proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7
Solvent Naphtha, petroleum, heavy aliph	64742-96-7
Soybean Oil, Me ester	67784-80-9
Copolymer of Maleic and Acrylic Acid	52255-49-9
DETA phosphonate	15827-60-8
Hexamethylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5
2-Propenoic acid, polymer with 2 propenamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8
Coco amine	61791-14-8
2-Propyn-1-olcompound with methyloxirane	38172-91-7



**LOCATION COORDINATES:**

ACCESS ROAD ENTRANCE  
 LATITUDE 39.544853 LONGITUDE -80.907797 (NAD 83)  
 LATITUDE 39.545076 LONGITUDE -80.907970 (NAD 27)  
 N 4377668.11 E 5079623.39 (UTM ZONE 17 METERS)

CENTER OF LAKE  
 LATITUDE 39.544617 LONGITUDE -80.910816 (NAD 83)  
 LATITUDE 39.544740 LONGITUDE -80.910768 (NAD 27)  
 N 4377668.80 E 5079764.49 (UTM ZONE 17 METERS)

CENTROID OF PAD  
 LATITUDE 39.544685 LONGITUDE -80.911358 (NAD 83)  
 LATITUDE 39.544680 LONGITUDE -80.911502 (NAD 27)  
 N 4376804.91 E 5079615.61 (UTM ZONE 17 METERS)

**GENERAL DESCRIPTION:**

THE ACCESS ROAD, WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

**MISS UTILITY STATEMENT:**

ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THE PROJECT DESIGN. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

**ENTRANCE PERMIT:**

ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-166) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

**FLOODPLAIN NOTES:**

THE PROPOSED SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" PER FEMA FLOOD MAP #54095C0404C.

**ENVIRONMENTAL NOTES:**

STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN MARCH 2020 & MAY/JUNE 2021 BY KLEINFELDER TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE JUNE 04, 2021 FIGURE 2 POTENTIALLY JURISDICTIONAL WATERS MAP WAS PREPARED BY KLEINFELDER AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THIS MAP DOES NOT IN ANY WAY REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USE OF THE WDEP. IT IS STRONGLY RECOMMENDED THAT THE APPLICABLE AGENCIES BE CONSULTED IN AN EFFORT TO OBTAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THIS EXHIBIT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILL AND STREAM CROSSINGS.

**GEOTECHNICAL STUDIES:**

A SUBSURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED BY PENNSYLVANIA SOIL & ROCK, INC. BETWEEN JULY 06, 2021 & JULY 13, 2021. THE REPORT PREPARED BY PENNSYLVANIA SOIL & ROCK, INC. DATED AUGUST 10, 2021, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY PENNSYLVANIA SOIL & ROCK, INC. FOR ADDITIONAL INFORMATION, AS NEEDED.

**PROJECT CONTACTS:**

ROBERT EDDY - UTILITY COORDINATOR  
 CELL: (304) 719-5109

**OPERATOR:**

ANTERO RESOURCES CORPORATION  
 635 WHITE OAKS BLVD.  
 BRIDGEPORT, WV 26009  
 PHONE: (304) 542-4100  
 FAX: (304) 542-4100

MIKE YOUNG - SURFACE LANDMAN  
 OFFICE: (740) 697-5841

**ENGINEER/SURVEYOR:**

NAVITUS ENGINEERING, INC.  
 CHRIS S. KUMP, PE - PROJECT  
 MANAGER/ENGINEER  
 OFFICE: (688) 652-4100 CELL: (540) 686-6747

**FLY WAGONER - ENVIRONMENTAL ENGINEER & REGULATORY MANAGER**

OFFICE: (304) 542-0068 CELL: (304) 478-0770

**ENVIRONMENTAL MANAGER**

MATT ALBRICHT - PROJECT MANAGER  
 OFFICE: (724) 772-7072 CELL: (603) 947-5284

**DIANA HOFF - SVT OPERATIONS**

OFFICE: (304) 567-6004

**GEOTECHNICAL:**

PENNSYLVANIA SOIL & ROCK, INC.  
 CHRISTOPHER W. SAMOIS - PROJECT ENGINEER  
 OFFICE: (412) 372-4300 CELL: (412) 588-0562

**RESTRICTIONS NOTES:**

1. THERE ARE NO LAKES, POND, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD. THERE ARE PERENNIAL STREAM & WETLAND IMPACTS THAT WILL NEED TO BE PERMITTED BY THE APPROPRIATE AGENCIES.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
4. THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 200 FEET OF THE WELLES BEING DRILLED.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

**REPRODUCTION NOTE**

THESE PLANS WERE CREATED TO BE PLOTTED ON "SERIAL" (ANSI C) PAPER. HALF SCALE DRAWINGS ARE ON "LETTER" (ANSI B) PAPER.

THESE PLANS WERE CREATED FOR COLOR PRINTING AND ANY REPRODUCTIONS IN GRAY SCALE OR COLOR MAY RESULT IN A LOSS OF INFORMATION AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

# DRY RUN WELL PAD & WATER CONTAINMENT PAD SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS

LINCOLN DISTRICT, TYLER COUNTY, WEST VIRGINIA  
 LITTLE MUSKINGUM-MIDDLE ISLAND WATERSHED

**APPROVED  
 WVDEP OOG**  
 12/9/2021

PADEN CITY WVA-OHIO USGS 7.5 QUAD MAP(S)



SCALE: 1" = 200'

WEST VIRGINIA COUNTY MAP



(NOT TO SCALE)

WVDOH COUNTY ROAD MAP



SCALE: 1" = 500'

**DESIGN CERTIFICATION:**

THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS USE 26-5.

MISS UTILITY of West Virginia  
 1-800-245-4848  
 West Virginia State Law  
 (Section XIV, Chapter 24-C)  
 Requires that you call two  
 business days before you dig in  
 the state of West Virginia.  
 IT'S THE LAW!!

**SHEET INDEX:**

- 1 - COVER SHEET
- 2 - CONSTRUCTION AND EAS CONTROLS NOTES
- 3 - 150'X75'
- 4 - MATERIAL QUANTITIES
- 5 - STORM DRAINAGE & EAS COMPUTATIONS
- 6 - EXISTING CONDITIONS
- 7 - EXISTING STRUCTURES & FEATURES
- 8 - OVERALL PLAN SHEET INDEX & VOLUMES
- 9 - ACCESS ROAD PLAN
- 10 - ACCESS ROAD & WELL PAD PLAN
- 11 - TEMPORARY CONSTRUCTION ACCESS PLAN
- 12 - WELL PAD CHASING PLAN
- 13-14 - ACCESS ROAD PROFILES
- 15 - ACCESS ROAD SECTIONS
- 16 - ACCESS ROAD & STOCKPILE SECTIONS
- 17-19 - WELL PAD SECTIONS
- 20 - STREAM CROSSING "A" DETAILS
- 21 - STREAM CROSSING "B" DETAILS
- 22-29 - CONSTRUCTION DETAILS
- 30 - ACCESS ROAD RECLAMATION PLAN
- 31 - ACCESS ROAD & WELL PAD RECLAMATION PLAN
- CE500-CE505 - GEOTECHNICAL DETAILS
- APPENDIX - RETAINING WALL DESIGN

WEST VIRGINIA STATE PLANE COORDINATE SYSTEM  
 ELEVATION BASED ON NAVD83  
 EXPANDED BY SURVEY ORIGIN OFF # 0911  
 FOR PROJECTIONS

DRY RUN LIMITS OF DISTURBANCE AREA (AC)	
Total Site	
Access Road "A"	9.10
Well Pad & Water Containment Pad	9.77
Excavator/Fossil Material Stockpiles	3.71
<b>Total Affected Area</b>	<b>22.58</b>
Total Wooded Acres Disturbed	21.63
Impacts to David E. Bowyer TM 9-3-1	
Access Road "A"	0.66
<b>Total Affected Area</b>	<b>0.66</b>
Total Wooded Acres Disturbed	0.12
Impacts to David E. Bowyer TM 9-3-1.1	
Access Road "A"	0.49
Excavator/Fossil Material Stockpiles	0.57
<b>Total Affected Area</b>	<b>1.06</b>
Total Wooded Acres Disturbed	0.36
Impacts to David E. Bowyer TM 8-19	
Access Road "A"	1.55
Well Pad & Water Containment Pad	9.77
Excavator/Fossil Material Stockpiles	3.64
<b>Total Affected Area</b>	<b>15.96</b>
Total Wooded Acres Disturbed	15.15

DRY RUN WETLAND IMPACT (SQUARE FEET)			
Wetland and Impact Cause	PA (SF)	Total Impact (SF)	Total Impact (AC)
Wetland Name (Cause)	50	50	0.001

DRY RUN EPHEMERAL STREAM IMPACT (LINEAR FEET)					
Stream and Impact Cause	Permanent Impacts		Temp. Impacts		Total Impact (LF)
	Culvert / FE (LF)	Inlets/Outlets Structures (LF)	Cofferdam/EAS Controls (LF)	EAS Controls (LF)	
KLF Stream01 (Access Road)	0	30	0	0	30
KLF Stream05 (Access Road)	33	0	30	0	63

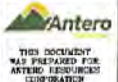
DRY RUN PERENNIAL STREAM IMPACT (LINEAR FEET)					
Stream and Impact Cause	Permanent Impacts		Temp. Impacts		Total Impact (LF)
	Culvert / FE (LF)	Inlets/Outlets Structures (LF)	Cofferdam/EAS Controls (LF)	EAS Controls (LF)	
Dry Run Rd WLF Stream00 (Access Road)	110	0	50	0	160

Well Name	W/ North NAD 77	N/D 27 L&L Long	UTM (METERS) ZONE 17	N/D 83 Lat. & Long
	Dry Run Well 6a	N 342934.44 E 10521146.72	EAT 76-23-64.202 LON 80-44-38.629	N 4377962.39 E 5079615.18

Proposed Well Pad Elevation: **10m 9**

**NAVITUS**  
 ENERGY ENGINEERING

DATE	REVISION	REVISED PER CLIENT REQUEST	REVISED PER CONTRACTOR REQUEST
		07/09/2021	09/01/2021
07/09/2021	REVISED PER CLIENT REQUEST		
08/17/2021	REVISED PER CONTRACTOR REQUEST		
09/01/2021	REVISED PER CLIENT REQUEST		



THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

COVER SHEET  
**DRY RUN WELL PAD & WATER CONTAINMENT PAD**  
 LINCOLN DISTRICT, TYLER COUNTY, WEST VIRGINIA

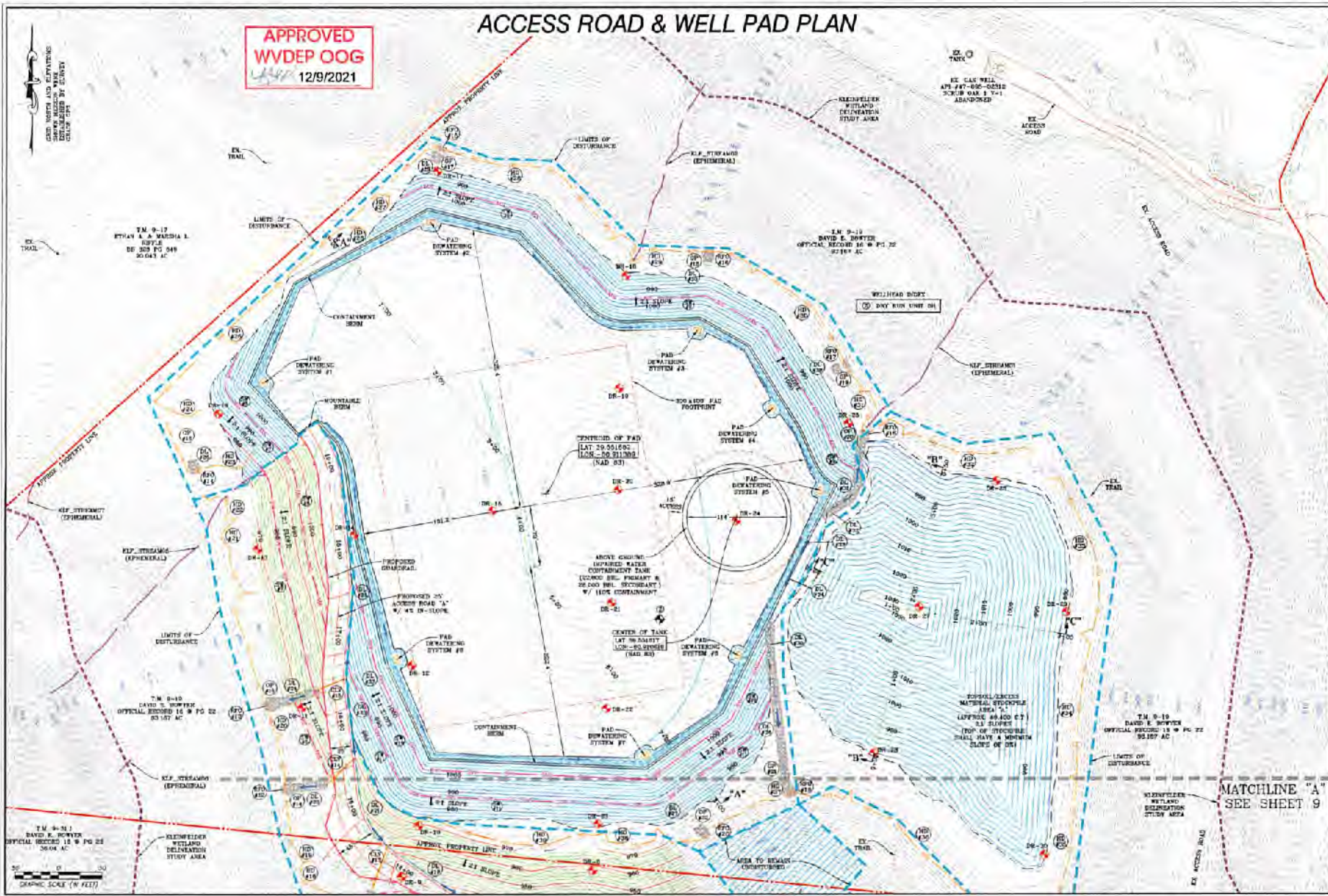


DATE: 01/29/2021  
 SCALE: AS SHOWN  
 SHEET 1 OF 31



# ACCESS ROAD & WELL PAD PLAN

**APPROVED**  
**WVDEP OOG**  
12/9/2021



**NAVITUS**  
ENERGY ENGINEERING

DATE	REVISION
07/06/2021	REVISED PER CLIENT REQUEST
07/17/2021	REVISED PER COMMENT
08/08/2021	REVISED PER CLIENT REQUEST



THIS DOCUMENT  
WAS PREPARED FOR  
ANTERO RESOURCES  
CORPORATION

**ACCESS ROAD & WELL PAD PLAN**

**DRY RUN & WATER CONTAINMENT PAD**

LINCOLN DISTRICT  
TYLER COUNTY, WEST VIRGINIA



DATE: 01/29/2021  
SCALE: 1" = 50'  
SHEET 10 OF 34