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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)

Wednesday, April 6, 2022  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
DENVER, CO 80202

Re: Permit approval for SMELT 2H  
47-085-10424-00-00

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.

James A. Martin  
Chief

Operator's Well Number: SMELT 2H  
Farm Name: ELMER W PIERCE  
U.S. WELL NUMBER: 47-085-10424-00-00  
Horizontal 6A New Drill  
Date Issued: 4/6/2022

# 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.

API Number: \_\_\_\_\_

## 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).

04/08/2022

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>085-Ritchie</u>	<u>Union</u>	<u>Oxford 7.5'</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: Smelt Unit 2H Well Pad Name: Cashew Pad

3) Farm Name/Surface Owner: Elmer W. Pierce Public Road Access: Pleasant Hollow Road

4) Elevation, current ground: 1040' Elevation, proposed post-construction: ~1019'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep   
Horizontal   
*SDW 3/10/2022*

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18,100' MD

11) Proposed Horizontal Leg Length: 6,588.6'

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12) Approximate Fresh Water Strata Depths: 53', 236'

13) Method to Determine Fresh Water Depths: 47-085-07654

WV Department of  
Environmental Protection

14) Approximate Saltwater Depths: 1709', 1847'

15) Approximate Coal Seam Depths: None Identified

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

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

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

WW-6B  
(04/15)

**4708510424**  
 API NO. 47-085 -  
 OPERATOR WELL NO. Smelt Unit 2H  
 Well Pad Name: Cashew Pad

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	16"	New	H-40	65#	80	80	CTS, 77 Cu. Ft.
Fresh Water	10-3/4"	New	J/K-55	40.4#	300	300	CTS, 417 Cu. Ft.
Coal	7-5/8"	New	p-110CY	26.4#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5"	New	P-110CY	18#	18,100	18,100	3631 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*SAW*  
*3/10/2022*

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	16"	20"	0.375"	1530	50	Class A	~1.16
Fresh Water	10-3/4"	13-1/2"	0.35"	2730	1000	Class A	~1.16
Coal	7-5/8"	9-7/8"	0.328"	9410	1500	Class A	~1.16
Intermediate							
Production	5"	6-3/4"	0.362"	15,840	12,000	Class G/H	~1.16
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

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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): 33.75 acres

22) Area to be disturbed for well pad only, less access road (acres): 14.29 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.

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24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

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25) Proposed borehole conditioning procedures:

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.

4708510424

WW-9  
(4/16)

API Number 47 - 085 - \_\_\_\_\_  
Operator's Well No. Smelt Unit 2H

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 494507062  
Watershed (HUC 10) South Fork Hughes River Quadrangle Oxford 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 (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

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

*SDW  
3/10/2022*

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  
Wetzel County Landfill (Permit #SWF-1021))

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 -  
Dust/Soil Foam, Production - Water 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)  
Wetzel County Landfill (Permit #SWF-1021)

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

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Company Official (Typed Name) Gretchen Kohler

MAR 14 2022

Company Official Title Director of Environmental & Regulatory Compliance

WV-Department of  
Environmental Protection

Subscribed and sworn before me this 17 day of Feb, 2022

Diane Blair

Notary Public

DIANE BLAIR  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID 19994011871  
MY COMMISSION EXPIRES 27-Apr-2024

My commission expires 27 Apr 2024

04/08/2022

**Antero Resources Corporation**

Proposed Revegetation Treatment: Acres Disturbed 33.75 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 (10.92 acres) + Well Pad (14.29 acres) + Staging 1 (1.04 acres) + Staging 2 (2.20 acres) + Spoil Pile 1 (1.12 acres) + Spoil Pile 2 (0.88 acres) + Topsoil Stripping (3.30 acres) = 33.75 Acres

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Annual Ryegrass	40
Field Bromegrass	40

Seed Type	lbs/acre
Crownvetch	10-15
Tall Fescue	30

See attached Table IV-3 for additional seed type (Cashew Pad Design)

See attached Table IV-4A for additional seed type (Cashew 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: [Signature]

Comments: Pre-seed/mulch as soon as reasonably possible. Upgrade EIS as necessary per WV DEP EIS manual.

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Title: OOG Inspector

Date: 3/10/2022

Field Reviewed? ( X ) Yes ( ) 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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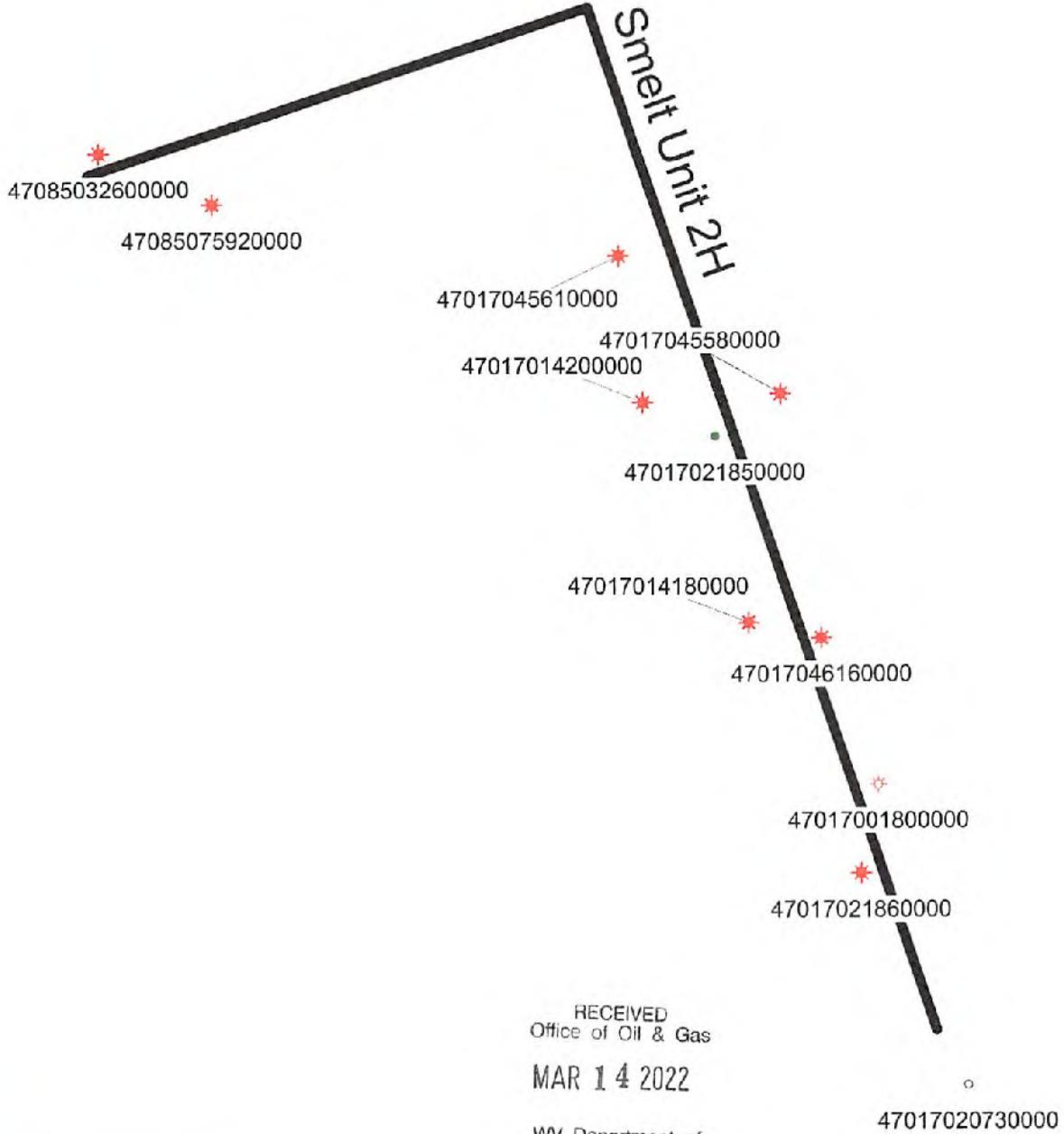
13. Escaid 110  
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco  
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep  
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K  
Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous  
Inorganic Salt
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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4708510424



Antero Resources Corporation

Smelt Unit 2H - AOR



- WELL SYMBOLS
- Dry Hole, With Show of Gas
  - Gas Well
  - Oil Well

March 4, 2022

04/08/2022

4708510424

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47017021850000	EARL ZINN	1	DIVERSIFIED PROD LLC	UNITED OPERATING CO	2,388	2,170-2,296	Weir	Big Injun, Pocono
47017021860000	W C HAUGHT	1	DIVERSIFIED PROD LLC	UNITED OPERATING CO	2,335		Weir	Big Injun, Pocono
47017001800000	W C HAUGHT	1	CORNELL GAS	CORNELL GAS	2,034		Big Injun	Pocono
47017020730000	SUMMERS	4783	DIVERSIFIED PROD LLC	EQUITABLE GAS CO				
47017014180000	J M JONES	1	KEY OIL CO	FRIESTAD FRANCIS	1,960		Pocono	
47017045610000	BALL	2	KEY OIL CO	KEY OIL CO	5,217	3,203-5,054	Warren	Berea, Weir, Big Injun, Pocono
47017045580000	BALL	4	KEY OIL CO	KEY OIL CO	5,210	3,626-5,008	Alexander	Benson, Warren, Berea, Weir, Big Injun, Pocono
47017046160000	RICHARDS MITCHELL	1	KEY OIL CO	KEY OIL CO	5,115	4,242-5,002	Alexander	Benson, Warren, Berea, Weir, Big Injun, Pocono
47085075920000	JETT MYRTLE ET AL	1	STALNAKER GENE INC	JETT MYRTLE ET AL	5,231	3800 - 5200	Riley, Lower Huron, Benson	Pocono
47085032600000	R L KEISTER	3	R & R OIL & GAS LLC	OIL STATES SALES	2,013		Big Injun	Pocono
47017014200000	DAVID D BALL	4	R & R OIL & GAS LLC	FRIESTAD FRANCIS	1,933		Big Lime, Big Injun	Pocono

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**911 Address**  
**2184 Sugar Run Rd**  
**West Union, WV 26456**

## Well Site Safety Plan

### Antero Resources

**Well Name: Cashew Unit 5H, Elklick Unit 1H & 2H, Shays Unit 1H & 2H And Smelt Unit 1H & 2H**

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**Pad Location: CASHEW PAD**

Ritchie County Union District

WV Department of  
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#### GPS Coordinates:

**Entrance** - Lat 39.180627' / Long -80.850392' (NAD83)

**Pad Center** - Lat 39.172018' / Long -80.857550' (NAD83)

*SDW*  
*3/10/2022*

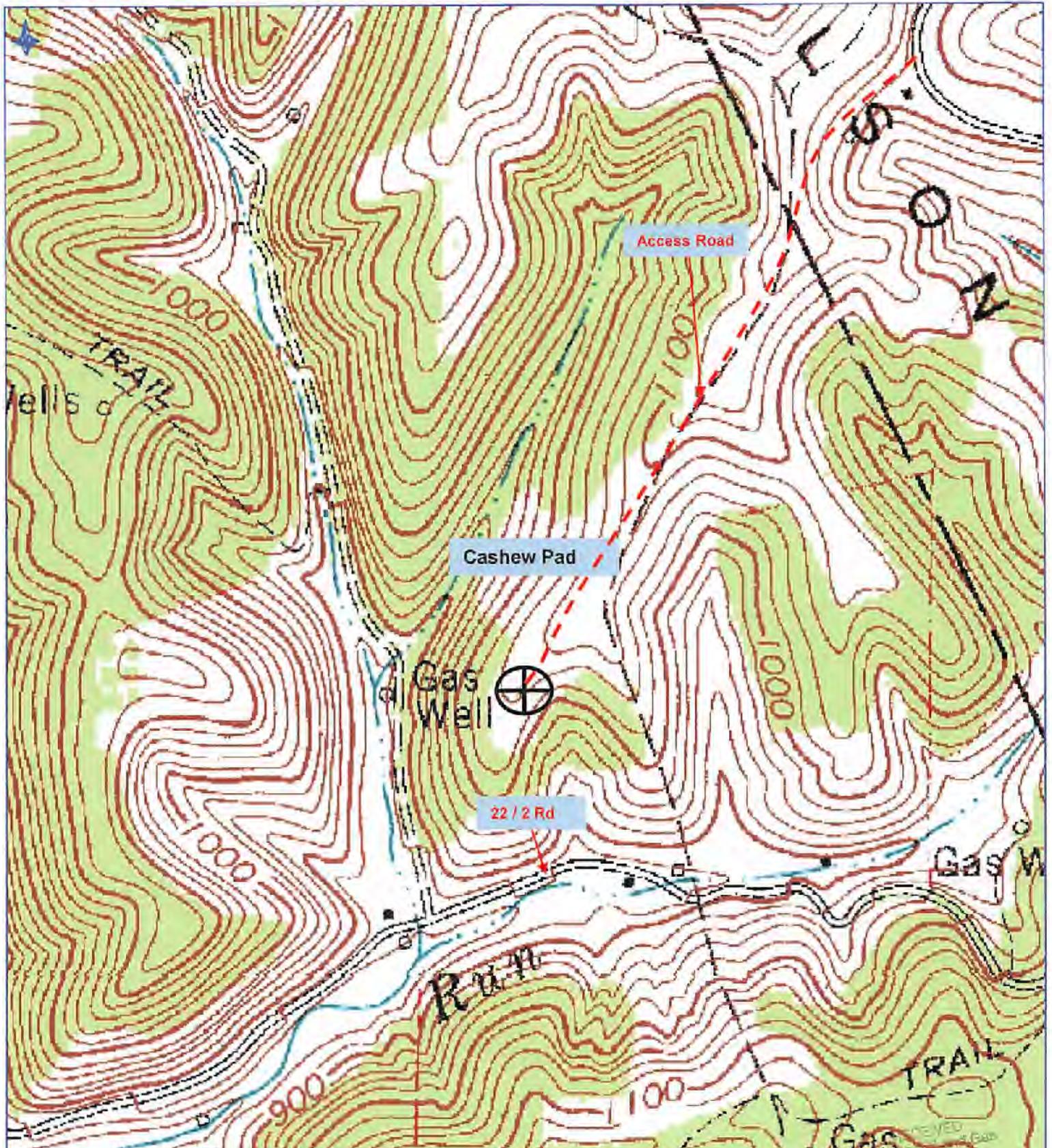
#### Driving Directions:

From Pullman: Head northeast on Main Street toward Ash Hill Street for 0.3 miles. Turn right onto Oxford Road for 5.1 miles. Continue onto S. Fork of Hughes River for 0.5 miles. Turn right onto Sugar Run for 2.3 miles. Lease road will be on your right.

#### Alternate Route:

From Auburn: Head west onto Auburn Road Main Street for 30 ft. Turn right onto Toll Gate Road for 0.3 miles. Continue onto Left Fork Bone Creek for 1.0 mile. Slight left onto CO Rd 7 13 for 1.7 miles. Continue straight onto Summer Road Brushy Fork for 1.7 miles. Turn right to stay on Summer Road Brushy Fork for 1.3 miles. Turn left onto Sugar Run for 2.2 miles. Lease road will be on your left.

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



**Antero Resources Corporation**  
Appalachian Basin  
Cashew Pad  
Ritchie County

Quadrangle: Oxford  
Watershed: South Fork Hughes River  
District: Union  
Date: 4-15-2021

04/08/2022

LATITUDE 39°12'30"

6,951'

1,299' TO BOTTOM HOLE

LATITUDE 39°10'00"

Antero Resources Corporation  
Well No. Smelt 2H

NOTES:

WELL 2H TOP HOLE INFORMATION:  
N: 247,509ft E: 1,615,039ft  
LAT: 39°10'17.65" LON: 80°51'28.26"  
BOTTOM HOLE INFORMATION:  
N: 241,814ft E: 1,620,607ft  
LAT: 39°09'22.20" LON: 80°50'16.49"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE OPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 2H TOP HOLE INFORMATION:  
N: 4,335,835m E: 512,294m  
BOTTOM HOLE INFORMATION:  
N: 4,334,129m E: 514,019m

(NAD) 27 (UTM) ZONE 17 COORDS:  
WELL 2H TOP HOLE INFORMATION:  
N: 14,224,438ft E: 1,680,704ft  
POINT OF ENTRY INFORMATION:  
N: 14,225,071ft E: 1,684,231ft  
BOTTOM HOLE INFORMATION:  
N: 14,218,840ft E: 1,686,364ft

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.

Southwest District - Doddridge County	Union District - Ritchie County
12-1 David Ball	21-4 Larry Gonder
12-2 David Ball	21-6 WF Smith
12-2.1 Tractees of Baptist Church	21-6.1 Lois Gonder
12-3 South Park Cemetery	21-7 Elmer Pierce
12-4 Kewn Ball	21-7.1 Larry Gonder
12-5 Isaac Richman	21-7.2 Larry Gonder
12-6 James Hought	21-8 Brian Vansant
12-42 James Hought	21-8.1 Brian Vansant
12-43 Jeffrey Bailey	21-8.2 Brian Vansant
12-44 Brown Goodwin	21-8.3 Brian Vansant
12-45 Charles Leonard	21-8.4 Brian Vansant
12-70 Brown Goodwin	21-10 James Beck
16-1 Coy Adams	21-10.1 Harvey Shepler
16-5 Arden Cogar	21-10.2 James Beck
16-10 Don'ta Hiley	21-11 Brian Vansant
	21-12 Brian Vansant
	21-13 Mark Vansant
	21-14 Don'ta Hiley
	21-15 Brian Vansant
	21-16 Randall Hess
	21-17 Steven Lusk
	21-18 Kelly Osbourne
	21-19 Kelly Osbourne
	21-20 Kelly Osbourne
	21-21 Kent Gratton
	21-22 Joshua Fricman
	21-23 Miles Ball
	21-24 M E Church
	21-25 Kelly Osbourne
	21-26 Kelly Osbourne
	21-27 Brian Vansant
	21-28 James Hought
	21-29 Miles Ball
	21-30 Kent Gratton
	21-31 Douglas Maxson
	21-32 Douglas Maxson
	21-33 Douglas Maxson
	21-34 Mary Osbourn
	21-35 Linda Stevens
	21-36 Clarence Bush
	21-37 Patricia Shepler
	21-38 Daryl Shepler
	21-39 Tammy Henderson
	21-40 Sami Dillano
	21-41 Sami Dillano
	21-42 Sami Dillano
	21-43 Clarence Bush
	21-44 Jon Bennell
	21-45 Jon Bennell
	21-46 Daryl Shepler
	21-47 Darlene Naylor
	21-48 Harold Pierce
	21-49 WVDOT

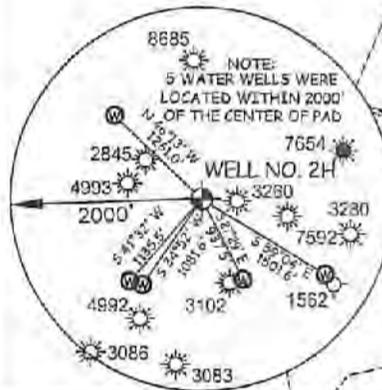
WV NORTH ZONE GRID NORTH

3,825' TO BOTTOM HOLE

LONGITUDE 80°50'00"

13,391'

LONGITUDE 80°50'00"



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.

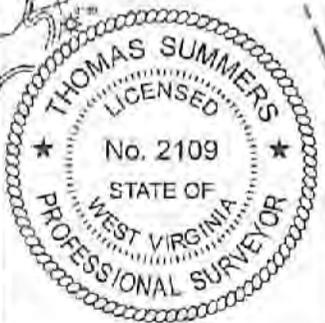
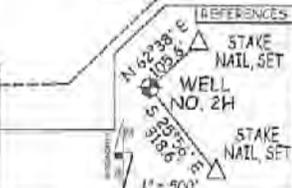


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 21-015WA  
DRAWING # SMELT2H  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE OPS

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

THOMAS SUMMERS P.S. 2109  
DATE 02/16/22  
OPERATOR'S WELL # SMELT 2H



WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ 47 \_\_\_ 085 10424 H&A  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X STATE COUNTY PERMIT  
 LOCATION: ELEVATION 1,040'-ORIGINAL 1,019'-PROPOSED WATERSHED SOUTH FORK HUGHES RIVER  
 QUADRANGLE OXFORD 7.5' DISTRICT UNION COUNTY RITCHIE  
 SURFACE OWNER ELMER W. PIERCE ACREAGE 67.78 ACRES +/-  
 OIL & GAS ROYALTY OWNER R. F. KEISTER ET AL; B. GUY WHITEHAIR ET UX; RALPH JETT ET UX; DAVID D. BALL ET UX; TEND W. ZINN ET AL; MITCHELL L. RICHARDS ET AL; WALLACE B. HAUGHT ET AL; E. W. SUMMERS ET UX LEASE ACREAGE 70 AC +/- 17 AC +/- 148 AC +/- 260 AC +/- 40 AC +/- 29 AC +/- 100 AC +/- 125 AC +/-  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X  
 PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_ PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 5,900' TVD 18,100' 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

04/08/2022

COUNTY NAME PERMIT

LATITUDE 39°12'30"

6,951'

1,299' TO BOTTOM HOLE

LATITUDE 39°10'00"

Antero Resources Corporation Well No. Smelt 2H

NOTES:

WELL 2H TOP HOLE INFORMATION: N: 247,509ft E: 1,615,039ft LAT: 39°10'17.65" LON: 80°51'28.26" BOTTOM HOLE INFORMATION: N: 241,814ft E: 1,620,607ft LAT: 39°09'22.20" LON: 80°50'16.49" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 660XT SUBMETER MAPPING GRADE GPS UNIT, PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 4,335,835m E: 512,294m BOTTOM HOLE INFORMATION: N: 4,334,129m E: 514,019m

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,224,438ft E: 1,680,704ft POINT OF ENTRY INFORMATION: N: 14,225,071ft E: 1,684,231ft BOTTOM HOLE INFORMATION: N: 14,218,840ft E: 1,686,364ft

NOTE: NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DADY CATTLE OR HOULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.



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 # 21-015WA DRAWING # SMELT2H SCALE 1" = 2000' 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 P.S. 2109

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

DATE 02/16/22 OPERATOR'S WELL # SMELT 2H

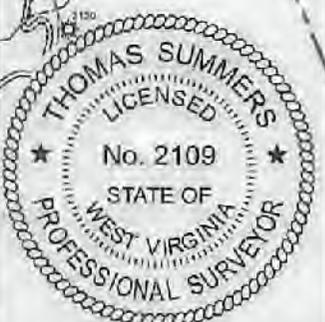
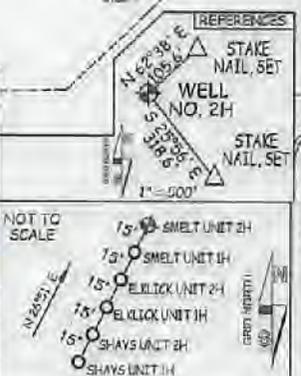


Table listing landowners and their corresponding well numbers. Southwest District - DeWolfe County and Union District - Ritchie County. Owners include David Ball, Trustees of Baptist Church, South Fork Cemetery, Isaac Richards, James Haight, Ralph Jett, Jeffrey Bailey, Brown Goodwin, Charles Leonard, Brown Goodwin, Coy Adm'n, Arden Cozar, Danita Hiley, Brian Harrison, Brian Vansant, Mark Vansant, Centra Hiley, Brian Harrison, Randall Hess, Steven Lusk, Kenny Osbourne, Kenny Osbourne, Kenny Osbourne, Kent Sretlan, Joshua Prizeman, Miles Ball, M.E. Church, Kenny Osbourne, Kenny Osbourne, Brian Vansant, James Haight, Miles Ball, Kent Sretlan, Douglas Maxson, Douglas Maxson, Douglas Maxson, Douglas Maxson, Mary Osbourne, Linda Jennings, Carene Bush, Patricia Shepler, Daryl Shepler, Terrell Henderson, Scott Italiano, Santi Stallone, Santi Stallone, Clarence Bush, Jon Bonnell, Jon Bonnell, Daryl Shepler, Darlene Haller, Harold Pierce, WDOT.

WELL TYPE: OIL \_\_\_ GAS x LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ 47 - 085 - 10434 WA (IF "GAS") PRODUCTION x STORAGE \_\_\_ DEEP \_\_\_ SHALLOW x STATE COUNTY PERMIT LOCATION: ELEVATION 1,040'-ORIGINAL 1,019'-PROPOSED WATERSHED SOUTH FORK HUGHES RIVER QUADRANGLE OXFORD 7.5' DISTRICT UNION COUNTY RITCHIE SURFACE OWNER ELMER W. PIERCE ACREAGE 67.78 ACRES +/- OIL & GAS ROYALTY OWNER R. F. KEISTER ET AL; B. GUY WHITEHAIR ET UX; RALPH JETT ET UX; LEASE ACREAGE 70 AC +/- 17 AC +/- 148 AC +/- DAVID D. BALL ET UX; TENID W. ZINN ET AL; MITCHELL L. RICHARDS ET AL; 260 AC +/- 40 AC +/- 29 AC +/- WALLACE B. HAUGHT ET AL; E. W. SUMMERS ET UX 100 AC +/- 125 AC +/- PROPOSED WORK: DRILL x CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE x PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION x OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_ PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,900' TVD 18,100' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

FORM WW-6

DENVER, CO 80202

PERMIT

04/08/2022

COUNTY NAME

PERMIT

WV NORTH ZONE GRID NORTH

3,825' TO BOTTOM HOLE

LONGITUDE 80°50'00"

13,391'

LONGITUDE 80°50'00"

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>R.F. Keister, et al Lease</u></b>			
R.F. Keister, et al	G.L. Yaste	1/8	0105/0504
G.L. Yaste	D.L.Y., Inc.	Assignment	0112/0302
D.L.Y.m Inc.	Betty Jean Stalkner and Rosalee Roberts	Assignment	0132/0565
Betty Jean Stalkner and Rosalee Roberts	R & S Gas Company	Assignment	0147/0548
R & S Gas Company	BET-RO Inc	Assignment	0147/0554
BET-RO Inc	Roberts Energy Corporation	Assignment	0240/0036
Roberts Energy Corporation	Antero Resources Corporation	Assignment	0329/0138
<b><u>B. Guy Whitehair Lease</u></b>			
B. Guy Whitehair, et ux	L.E. Mossor and Harry Haddox	1/8	0107/0343
L.E. Mossor and Harry Haddox	Francis Friestad	Assignment	0089/0497
Francis Friestad	W.H. Thomson	Assignment	0152/0213
W.H. Thomson	BET-RO Inc	Assignment	0177/0011
BET-RO Inc.	Jesam Energy	Assignment	0204/0134
Jesam Energy	Roberts Energy	Assignment	0204/0705
Roberts Energy	Key Oil Company	Assignment	0258/0619
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0263/0629
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523
<b><u>Ralph Jett, et ux Lease</u></b>			
Ralph Jett, et ux	W.R. Development Co. Inc.	1/8	0191/0378
W.R. Development Co. Inc.	Whittle Corporation	Assignment	0254/0910
Whittle Corporation	Antero Resources Appalachian Corporation	Assignment	0255/0526
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0015/0702
<b><u>David D. Ball, et ux Lease</u></b>			
David Dale Ball Jr.	Antero Resources Corporation	1/8+	04170123
<b><u>Enid W. Zinn et al Lease</u></b>			
Enid W. Zinn, et al	Consolidated Gas Supply Corporation	1/8	0103/0080
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Development Company	Assignment	0139/0041
CNG Development Company	CNG Producing Company	Merger	0167/0210
CNG Producing Company	Dominion Exploration and Production, Inc	Merger	0049/0340
Dominion Exploration and Production, Inc	CONSOL Gas Company	Name Change	0293/0252
CONSOL Gas Company	CNX Gas Company	Merger	0293/0252
CNX Gas Company	Antero Resources Corporation	Assignment	0409/0672
<b><u>Mitchell L. Richards, et ux Lease</u></b>			
Mitchell L. Richards, et al	Key Oil Company	1/8	0191/0204
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0276/0526
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523

RECEIVED  
Office of Oil and Gas  
MAR 01 2022  
WV Department of  
Environmental Protection

Operator's Well Number Smelt Unit 2H

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

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Wallace B Haught, et al Lease</u>			
Wallace B. Haught, et al	Consolidated Gas Supply Corporation	1/8	0095/0375
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Development Company	Assignment	0139/0041
CNG Development Company	CNG Producing Company	Merger	0167/0210
CNG Producing Company	Dominion Exploration and Production, Inc	Merger	0049/0340
Dominion Exploration and Production, Inc	CONSOL Gas Company	Name Change	0293/0252
CONSOL Gas Company	CNX Gas Company	Merger	0293/0252
CNX Gas Company	Antero Resources Corporation	Assignment	0409/0672

\*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.

WW-6A1  
(5/13)

Operator's Well No. Smelt Unit 2H

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

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- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>E.W. Summers, et ux Lease</u>				
	E.W. Summers, et ux	G.W. Thompson	1/8	0025/0260
	G.W. Thompson	The Philadelphia Company of West Virginia	Assignment	Unrecorded
	The Philadelphia Company of WV	Pittsburgh and West Virginia Gas Co.	Assignment	0032/0253
	Pittsburgh and West Virginia Gas Co.	Equitable Gas Company	Conveyance	0126/0473
	Equitable Gas Company	Equitrans, Inc.	Assignment	0154/0475
	Equitrans, Inc.	EQT Capital Corporation	Merger	0006/0751
	EQT Capital Corporation	Equitable Resources, Inc.	Merger	0023/0032
	Equitable Resources, Inc.	Equitrans, LP	Assignment	0329/0645
	Equitrans, LP	Equitable Production-Eastern States, Inc.	Assignment	0234/0830
	Equitable Production-Eastern States, Inc.	Equitable Production Company	Merger	0281/0346
	Equitable Production Company	EQT Production Company	Name Change	0218/0346
	EQT Production Company	Antero Resources Corporation	Assignment	0487/0641

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MAR 01 2022  
WV Department of  
Environmental Protection

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

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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

Well Operator: Antero Resources Corporation  
 By: Tim Rady  
 Its: VP of Land

4708510424



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

February 14, 2022

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: Smelt Unit 1H - 2H  
Quadrangle: Oxford 7.5'  
Ritchie County/Union District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permits for the Smelt Unit 1H - 2H horizontal shallow wells. 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 Smelt Unit 1H - 2H horizontal laterals will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tyler Skavdahl", is written over a light blue horizontal line.

Tyler Skavdahl  
Senior Landman

RECEIVED  
Office of Oil and Gas  
MAR 01 2022  
WV Department of  
Environmental Protection

04/08/2022

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

Date of Notice Certification: 02/25/2022

API No. 47- 085 - \_\_\_\_\_  
Operator's Well No. Smelt Unit 2H  
Well Pad Name: Cashew 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>512294m</u>
County: <u>Ritchie</u>		Northing: <u>4335835m</u>
District: <u>Union</u>	Public Road Access: <u>Pleasant Hollow Road</u>	
Quadrangle: <u>Oxford 7.5'</u>	Generally used farm name: <u>Elmer W. Pierce</u>	
Watershed: <u>South Fork Hughes River</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:  *PLEASE CHECK ALL THAT APPLY  <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED  <input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED  <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  <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)  <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION  <input checked="" type="checkbox"/> 5. PUBLIC NOTICE  <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<b>OOG OFFICE USE ONLY</b>  <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input type="checkbox"/> RECEIVED  <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input type="checkbox"/> RECEIVED  <input type="checkbox"/> RECEIVED  <input type="checkbox"/> RECEIVED
--	--	--

**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.

**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:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Diana Hoff <i>Diana O. Hoff</i></u>		<u>Denver, CO 80202</u>
Its:	<u>Senior VP of Operations</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7310</u>	Email:	<u>mstanton@anteroresources.com</u>



Subscribed and sworn before me this 28 day of Feb 2022.

*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 of your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).

RECEIVED  
Office of Oil and Gas  
MAR 01 2022  
WV Department of  
Environmental Protection

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:** 02/28/2022 **Date Permit Application Filed:** 02/28/2022

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. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: Elmer W. Pierce  
Address: 1634 Pleasant Hollow Road  
West Union, WV 26456

Name: Larry & Lois Gander  
Address: 2249 Clairmont Drive  
Pittsburgh, PA 15241

SURFACE OWNER(s) (Road and/or Other Disturbance)

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

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

SURFACE OWNER(s) (Impoundments or Pits)

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

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address: \_\_\_\_\_

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address: \_\_\_\_\_

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE

Name: PLEASE SEE ATTACHMENT  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

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

\*Please attach additional forms if necessary

**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 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.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

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 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 well pad 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.

**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. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**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. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**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.

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.

WW-6A  
(8-13)

API NO. 47-08510424  
OPERATOR WELL NO. Small Unit 2H  
Well Pad Name: Cashaw Pad

**Notice is hereby given by:**

Well Operator: Antero Resources Corporation  
Telephone: (303) 357-7310 Diana O. Hoff  
Email: mstanton@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
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 28 day of Feb 2022.

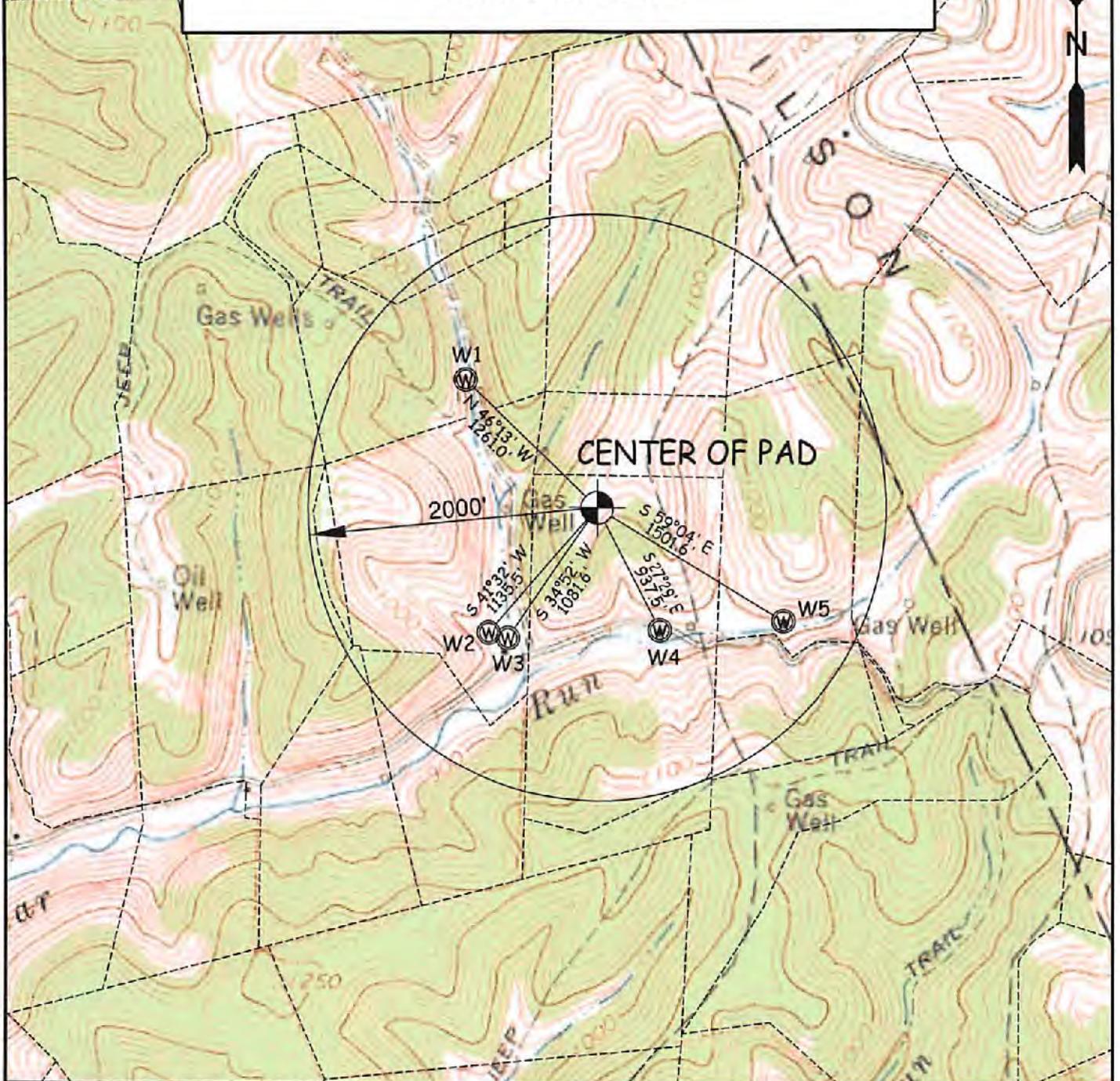
Diane Blair Notary Public

My Commission Expires 27 Apr 2024

RECEIVED  
Office of Oil and Gas  
MAR 01 2022  
WV Department of  
Environmental Protection

04/08/2022

CASHEW PAD  
ANTERO RESOURCES  
CORPORATION



	WELL SURFACE OWNER	ADDRESS	WELL LATITUDE	WELL LONGITUDE
W1	LARRY & LOIS GANDER	2249 CLAIRMONT DR., PITTSBURGH, PA 15241	39°10'26.56"	80°51'39.13"
W2	WF SMITH HEIRS	2249 CLAIRMONT DR., PITTSBURGH, PA 15241	39°10'09.56"	80°51'36.81"
W3	WF SMITH HEIRS	2249 CLAIRMONT DR., PITTSBURGH, PA 15241	39°10'09.21"	80°51'35.09"
W4	ELMER W. PIERCE	1634 PLEASANT HOLLOW RD, WEST UNION, WV 26456	39°10'09.92"	80°51'21.76"
W5	DONALD VANSANT ET AL	14187 DAY AVE., MOUNT AIRY, MD 21771	39°10'10.64"	80°51'10.91"

WILLOW LAND SURVEYING, PLLC P.O. BOX 17, PENNSBORO, WV 26415 (304) 659-1717	TOPO SECTION(S) OF : OXFORD 7.5' QUAD.	SCALE : 1-INCH = 1000-FEET 0'      1000'      2000'      3000' 
	JOB #: 12-063WA	
DATE: 03/23/21	DRAWN BY: D.L.P.	FILE: CASHEWPADWATERMAP

4708510424

**WW-6A Notice of Application to Water Source Owner:**

**Water Source Owners:**

W1:

**Owner:** Larry & Lois Gander  
**Address:** 2249 Clairmont Dr.  
Pittsburgh, PA 15241-3251

W2 & W3:

**Owner:** WF Smith Heirs  
**Address:** 2249 Clairmont Dr.  
Pittsburgh, PA 15241-3251

W4:

**Owner:** Elmer W. Pierce  
**Address:** 1634 Pleasant Hollow Road  
West Union, WV 26456-6272

W5:

**Owner:** Donald Vasant, et al  
**Address:** 14187 Day Ave.  
Mount Airy, MD 21771-4631

RECEIVED  
Office of Oil and Gas  
MAR 01 2022  
WV Department of  
Environmental Protection

04/08/2022

**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:** 02/17/2022      **Date Permit Application Filed:** 02/28/2022

**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: <u>Elmer W. Pierce</u>	Name: <u>Larry &amp; Lois Gander</u>
Address: <u>1534 Pleasant Hollow Road</u>	Address: <u>2249 Clairmont Drive</u>
<u>West Union, WV 26456</u>	<u>Pittsburgh, PA 15241</u>

**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>512294m</u>
County: <u>Ritchie</u>	Northing: <u>4335835m</u>
District: <u>Union</u>	Public Road Access: <u>Pleasant Hollow Road</u>
Quadrangle: <u>Oxford 7.5'</u>	Generally used farm name: <u>Gander, Larry and Lois</u>
Watershed: <u>South Fork Hughes River</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: <u>Antero Resources Corporation</u>	Authorized Representative: <u>Mallory Stanton</u>
Address: <u>1615 Wynkoop St.</u>	Address: <u>1615 Wynkoop St.</u>
<u>Denver, CO 80202</u>	<u>Denver, CO 80202</u>
Telephone: <u>303-357-7310</u>	Telephone: <u>303-357-7310</u>
Email: <u>mstanton@anteroresources.com</u>	Email: <u>mstanton@anteroresources.com</u>
Facsimile: <u>303-357-7315</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, \_\_\_\_\_, 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>512294m</u>
County: <u>Ritchie</u>	Northing: <u>4335635m</u>
District: <u>Union</u>	Public Road Access: <u>Pleasant Hollow Road</u>
Quadrangle: <u>Oxford 7.5'</u>	Generally used farm name: <u>Eimer W. Pierce</u>
Watershed: <u>South Fork Hughes River</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: \_\_\_\_\_  
 Print Name: \_\_\_\_\_  
 Date: \_\_\_\_\_

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

Company: \_\_\_\_\_ RECEIVED  
 By: \_\_\_\_\_ Office of Oil and Gas  
 Its: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_ WV Department of Environmental Protection

MAR 01 2022

**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).

04/08/2022



4708510424

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

February 10, 2022

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

Subject: DOH Permit for the Cashew Pad, Ritchie County  
Smelt Unit 2H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #04-2019-0091 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off Doddridge County Route 52 SLS MP 2.97.

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: Diane Blair  
Antero Resources Corporation  
CH, OM, D-3 & 4  
File

**Subdivision 3.3.e A listing of the anticipated additives that may be used in the water used for fracturing or stimulating the well. (A listing of the additives that were actually used in the fracturing or stimulating of the well shall be submitted as part of the completion report required by W. Va. Code 22-6-22.)**

**FRACTURING/STIMULATING INTERVAL**

<b>Additive</b>	<b>Chemical Abstract Service Number (CAS #)</b>
1. Fresh Water	7732-18-5
2. 2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
3. Ammonium Persulfate	7727-54-0
4. Anionic copolymer	Proprietary
5. Anionic polymer	Proprietary
6. BTEX Free Hydrotreated Heavy Naptha	64742-48-9
7. Cellulase enzyme	(Proprietary)
8. Demulsifier Base	(Proprietary)
9. Ethoxylated alcohol blend	Mixture
10. Ethoxylated Nonylphenol	68412-54-4
11. Ethoxylated oleylamine	26635-93-8
12. Ethylene Glycol	107-21-1
13. Glycol Ethers	111-76-2
14. Guar gum	9000-30-0
15. Hydrogen Chloride	7647-01-0
16. Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
17. Isopropyl alcohol	67-63-0
18. Liquid, 2,2-dibromo-3- nitrilopropionamide	10222-01-2
19. Microparticle	Proprietary
20. Petroleum Distillates (BTEX Below Detect)	64742-47-8
21. Polyacrylamide	57-55-6
22. Propargyl Alcohol	107-19-7
23. Propylene Glycol	57-55-6
24. Quartz	14808-60-7
25. Silica crystalline quartz	7631-86-9
26. Sodium Chloride	7647-14-5
27. Sodium Hydroxide	1310-73-2
28. Sugar	57-50-1
29. Surfactant	68439-51-0
30. Suspending agent (solid)	14808-60-7
31. Tar bases, quinolone derivs, benzyl chloride-quarternized	72480-70-7
32. Solvent Naptha, petroleum, heavy aliph	64742-96-7
33. Soybean Oil, Me ester	67784-80-9
34. Copolymer of Maleic and Acrylic Acid	52255-49-9
35. DETA Phosphonate	15827-60-8
36. Hexamethylene Triamine Penta	34690-00-1
37. Phosphino Carboxylic acid polymer	71050-62-9
38. Hexamethylene diamine penta	23605-74-5
39. 2-Propenoic acid, polymer with 2 propenamide	9003-06-9
40. Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
41. Diethylene Glycol	111-46-6
42. Methenamine	100-97-0
43. Polyethylene polyamine	68603-67-8
44. Coco amine	61791-14-8
45. 2-Propyn-1-olcompound with methyloxirane	38172-91-7

LOCATION COORDINATES			
SITE LOCATIONS	WV83-NF (NORTH ZONE)		UTMS-17
	LATITUDE	LONGITUDE	NORTHING EASTING
MAIN ACCESS ROAD ENTRANCE	39.180627	-80.850352	4336621.8741 532921.8267
CENTROID OF WELL PAD	39.172018	-80.857550	4335875.5858 532305.1042
CENTER OF CONTAINMENT TANK	39.170990	-80.857541	4335761.3655 532271.4820

# CASHEW WELL PAD ANTERO RESOURCES CORPORATION FINAL DESIGN PLANS

UNION & SOUTHWEST DISTRICT, RITCHIE & DODDRIDGE COUNTY, WEST VIRGINIA  
LITTLE KANAWHA WATERSHED

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25. EROSION CONTROL PLAN	51. WEST VIRGINIA STATE MAP
26. EROSION CONTROL PLAN	52. WEST VIRGINIA STATE MAP

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

**FLOODPLAIN NOTES:**  
THE PROPOSED SITE LOCATIONS ARE NOT WITHIN ANY DESIGNATED FLOOD ZONES PER FEMA MAP NUMBER 8-56050C0290C.

**MISS UTILITY STATEMENT:**  
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TICKET #187888887. MAINTENANCE 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 MA 108) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

**ENVIRONMENTAL NOTES:**  
STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN OCTOBER, 2018 BY GAI CONSULTANTS TO DETERMINE THE SITE FOR WATERS AND WETLANDS THAT ARE MISS' LEVELLY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE OCTOBER, 2018 STREAM AND WETLAND DELINEATION WAS PREPARED BY GAI CONSULTANTS AND MANAGES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT IN ANY WAY REPRESENT A FUNCTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE APPLICANT CONSULT WITH AN ENVIRONMENTAL ENGINEER TO OBTAIN THE NECESSARY PERMITS FROM THE USACE AND/OR WVDEP PRIOR TO BEGINNING CONSTRUCTION ON THE PROPERTIES DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S. INCLUDING WETLANDS AND STREAM CHANNELS.

**GEOTECHNICAL NOTES:**  
THE PROPOSED ACCESS ROAD CUT SLOPE (2:1) SHALL BE FIELD VERIFIED BY A CERTIFIED GEOTECHNICAL ENGINEER TO ENSURE THE PROPOSED SLOPE ARE ADEQUATE PRIOR TO CONSTRUCTION. ACCESS ROAD CONSTRUCTION SHALL BE MONITORED BY A REPRESENTATIVE OF THE USACE OR AN ENVIRONMENTAL ENGINEER/DESIGN ENGINEER OF QUALIFIED CONSTRUCTION.

**RESTRICTIONS NOTES:**

- THERE ARE NO LAKES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD LOC.
- THERE ARE NO WETLANDS TO BE DISTURBED OR WITHIN 100 FEET OF THE WELL PAD LOC.
- THERE ARE NO CONSIDERABLE STREAMS WITHIN 100 FEET OF THE WELL PAD LOC.
- THERE ARE NO PERMANENT OR PERENNIAL STREAMS WITHIN THE LCO.
- THERE ARE NO NATURALLY OCCURRING TRIBUTARY STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOC.
- THERE ARE NO GROUNDWATER INTAKES OF PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD AND LOC.
- THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 300 FEET OF THE WELL PAD AND LOC.
- THERE ARE NO OCCUPIED OVERLAPPING STRUCTURES WITHIN 400 FEET OF THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,000 SQUARE FEET WITHIN 600 FEET OF THE CENTER OF THE WELL PAD.

**PROJECT CONTACTS:**

**ENGINEER/SUPERVISOR:**  
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
JOSEPH O. ROBERTSON, P.E. - PROJECT MANAGER/ENGINEER  
OFFICE: (304) 850-3111 FAX: (304) 850-3222 CELL: (404) 366-3998

**ENVIRONMENTAL:**  
GAI CONSULTANTS  
JASON COOP - PROJECT MANAGER  
OFFICE: (304) 766-5354

**GEOTECHNICAL:**  
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
KIMBERLY L. HARRIS, P.E. - PROJECT MANAGER  
OFFICE: (304) 850-3111 FAX: (304) 850-3222 CELL: (919) 771-7198

**OPERATOR:**  
ANTERO RESOURCES CORPORATION  
184 WATERS BLVD  
BROADFOOT, WV 26030  
PHONE: (304) 422-4300  
FAX: (304) 422-4302

**ENVIRONMENTAL & REGULATORY MANAGER:**  
AMERICAN ENERGY SERVICES  
OFFICE: (304) 422-4300 CELL: (304) 422-4300

**DESIGN MANAGER:**  
ROBERT WYKES  
OFFICE: (304) 422-4300 CELL: (304) 422-4300

**UTILITY SUPERVISOR:**  
SCOTT HOFFER  
CELL: (505) 615-8888



**LOCATION MAP**  
OXFORD USGS 7.5' QUAD  
SCALE: 1 INCH = 1000 FEET



**VICINITY MAP**  
RITCHIE & DODDRIDGE COUNTY ROAD MAP  
SCALE: 1 INCH = 1 MILE

APPROVED  
WVDEP OOG  
UPDATED  
3/10/2022

**PLAN REPRODUCTION WARNING**

THE PLANS HAVE BEEN CREATED ON A 24" X 36" SHEET FOR REDUCING. REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ACCURATE FOR CONSTRUCTION PURPOSES.

"WARNING" INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

WEST VIRGINIA STATE LAW  
CALL BEFORE YOU DIG!

WEST VIRGINIA STATE LAW  
PROHIBITS ANYONE FROM CALLING  
TWO BUSINESS DAYS  
BEFORE YOU DIG IN THE  
STATE OF WEST VIRGINIA.  
IT'S THE LAW!

LIMITS OF DISTURBANCE PARCEL BREAK UPS - CASHEW WELL PAD					
RITCHIE & DODDRIDGE COUNTY, WEST VIRGINIA					
OWNER	TM-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACERASE
LARRY AND LORI SANDER	23.1	339 TW	100.00	PARCEL INTERSECTION	0.00
				MAIN ACCESS ROAD	0.00
				STAGING AREA 1	0.76
				STAGING AREA 2	0.90
				STAGING AREA 3	0.22
				STAGING AREA 4	0.28
				STAGING AREA 5	0.28
				STAGING AREA 6	0.28
				STAGING AREA 7	0.28
				STAGING AREA 8	0.28
				STAGING AREA 9	0.28
				STAGING AREA 10	0.28
				STAGING AREA 11	0.28
				STAGING AREA 12	0.28
				STAGING AREA 13	0.28
				STAGING AREA 14	0.28
				STAGING AREA 15	0.28
				STAGING AREA 16	0.28
				STAGING AREA 17	0.28
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				STAGING AREA 21	0.28
				STAGING AREA 22	0.28
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				STAGING AREA 26	0.28
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				STAGING AREA 38	0.28
				STAGING AREA 39	0.28
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				STAGING AREA 42	0.28
				STAGING AREA 43	0.28
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				STAGING AREA 93	0.28
				STAGING AREA 94	0.28
				STAGING AREA 95	0.28
				STAGING AREA 96	0.28
				STAGING AREA 97	0.28
				STAGING AREA 98	0.28
				STAGING AREA 99	0.28
				STAGING AREA 100	0.28

GRADING VOLUMES			L.I.D. AREAS	
DESCRIPTION	CUBIC YD	FILL/EMPTY	DESCRIPTION	ACRES
MAIN ACCESS ROAD	0.00	0.00	MAIN ACCESS ROAD	0.00
STAGING AREA 1	100.00	0.00	STAGING AREA 1	0.28
STAGING AREA 2	0.00	0.00	STAGING AREA 2	0.28
STAGING AREA 3	0.00	0.00	STAGING AREA 3	0.28
STAGING AREA 4	0.00	0.00	STAGING AREA 4	0.28
STAGING AREA 5	0.00	0.00	STAGING AREA 5	0.28
STAGING AREA 6	0.00	0.00	STAGING AREA 6	0.28
STAGING AREA 7	0.00	0.00	STAGING AREA 7	0.28
STAGING AREA 8	0.00	0.00	STAGING AREA 8	0.28
STAGING AREA 9	0.00	0.00	STAGING AREA 9	0.28
STAGING AREA 10	0.00	0.00	STAGING AREA 10	0.28
STAGING AREA 11	0.00	0.00	STAGING AREA 11	0.28
STAGING AREA 12	0.00	0.00	STAGING AREA 12	0.28
STAGING AREA 13	0.00	0.00	STAGING AREA 13	0.28
STAGING AREA 14	0.00	0.00	STAGING AREA 14	0.28
STAGING AREA 15	0.00	0.00	STAGING AREA 15	0.28
STAGING AREA 16	0.00	0.00	STAGING AREA 16	0.28
STAGING AREA 17	0.00	0.00	STAGING AREA 17	0.28
STAGING AREA 18	0.00	0.00	STAGING AREA 18	0.28
STAGING AREA 19	0.00	0.00	STAGING AREA 19	0.28
STAGING AREA 20	0.00	0.00	STAGING AREA 20	0.28
STAGING AREA 21	0.00	0.00	STAGING AREA 21	0.28
STAGING AREA 22	0.00	0.00	STAGING AREA 22	0.28
STAGING AREA 23	0.00	0.00	STAGING AREA 23	0.28
STAGING AREA 24	0.00	0.00	STAGING AREA 24	0.28
STAGING AREA 25	0.00	0.00	STAGING AREA 25	0.28
STAGING AREA 26	0.00	0.00	STAGING AREA 26	0.28
STAGING AREA 27	0.00	0.00	STAGING AREA 27	0.28
STAGING AREA 28	0.00	0.00	STAGING AREA 28	0.28
STAGING AREA 29	0.00	0.00	STAGING AREA 29	0.28
STAGING AREA 30	0.00	0.00	STAGING AREA 30	0.28
STAGING AREA 31	0.00	0.00	STAGING AREA 31	0.28
STAGING AREA 32	0.00	0.00	STAGING AREA 32	0.28
STAGING AREA 33	0.00	0.00	STAGING AREA 33	0.28
STAGING AREA 34	0.00	0.00	STAGING AREA 34	0.28
STAGING AREA 35	0.00	0.00	STAGING AREA 35	0.28
STAGING AREA 36	0.00	0.00	STAGING AREA 36	0.28
STAGING AREA 37	0.00	0.00	STAGING AREA 37	0.28
STAGING AREA 38	0.00	0.00	STAGING AREA 38	0.28
STAGING AREA 39	0.00	0.00	STAGING AREA 39	0.28
STAGING AREA 40	0.00	0.00	STAGING AREA 40	0.28
STAGING AREA 41	0.00	0.00	STAGING AREA 41	0.28
STAGING AREA 42	0.00	0.00	STAGING AREA 42	0.28
STAGING AREA 43	0.00	0.00	STAGING AREA 43	0.28
STAGING AREA 44	0.00	0.00	STAGING AREA 44	0.28
STAGING AREA 45	0.00	0.00	STAGING AREA 45	0.28
STAGING AREA 46	0.00	0.00	STAGING AREA 46	0.28
STAGING AREA 47	0.00	0.00	STAGING AREA 47	0.28
STAGING AREA 48	0.00	0.00	STAGING AREA 48	0.28
STAGING AREA 49	0.00	0.00	STAGING AREA 49	0.28
STAGING AREA 50	0.00	0.00	STAGING AREA 50	0.28
STAGING AREA 51	0.00	0.00	STAGING AREA 51	0.28
STAGING AREA 52				



# CASHEW WELL PAD ANTERO RESOURCES CORPORATION FINAL DESIGN PLANS

UNION & SOUTHWEST DISTRICT, RITCHIE & DODDRIDGE COUNTY, WEST VIRGINIA  
LITTLE KANAWHA WATERSHED

LOCATION COORDINATES				
SITE LOCATIONS	WV83-NF [ NORTH ACRE ]		UTM83-Z7	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD ENTRANCE	35.180627	-80.850982	4336631.8741	512921.8257
CENTROID OF WELL PAD	35.172018	-80.857550	4335675.5899	512305.1042
CENTER OF CONTAINMENT TANK	35.170990	-80.857941	4335761.3656	512271.4820

**GENERAL DESCRIPTION:**  
THE ACCESS ROADS, WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED TO AND IN THE DEVELOPMENT OF INDIVIDUAL WATERSHEDS IN THE LITTLE KANAWHA WATERSHED.

**FLOODPLAIN NOTES:**  
THE PROPOSED SITE LOCATION IS NOT WITHIN ANY IDENTIFIED FLOOD ZONE. PER FEMA MAP NUMBER(S) #25083C0200C.

**MISS UTILITY STATEMENT:**  
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN. MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

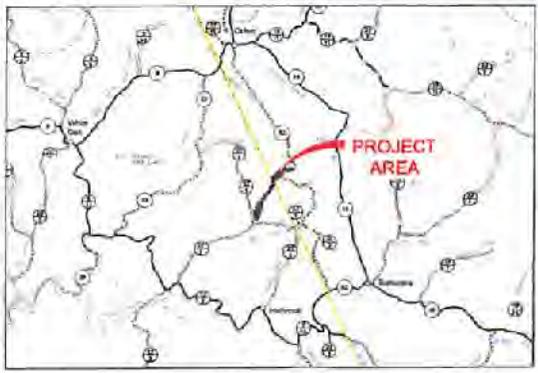
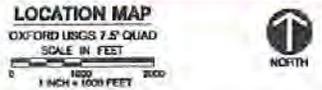
**ENTRANCE PERMIT:**  
ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENTRANCE PERMIT FROM MA-100 FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF LOGS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITY.

**ENVIRONMENTAL NOTES:**  
STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN OCTOBER, 2018 BY GAI CONSULTANTS TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY FLOW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE OCTOBER, 2018 STREAM AND WETLAND DELINEATION MAP WAS PREPARED BY GAI CONSULTANTS AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE APPLICANT CONSULT WITH THE APPLICABLE AGENCIES IN AN EFFORT TO OBTAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THIS MAP PRIOR TO BEGINNING RECONSTRUCTION ON THE PROPERTIES DESCRIBED HEREIN. THE APPLICANT 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 NOTES:**  
THE PROPOSED ACCESS ROAD CUT SLOPE (S-1) SHALL BE FIELD VERIFIED BY A CERTIFIED GEOTECHNICAL ENGINEER TO ENSURE THE PROPOSED SLOPE IS ABSOLUTE PRIOR TO CONSTRUCTION. ACCESS ROAD CONSTRUCTION SHALL BE MONITORED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER ON PROJECT DESIGN DURING CONSTRUCTION.

**RESTRICTIONS NOTES:**

- THERE ARE NO LAKES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD LOC.
- THERE ARE NO WETLANDS TO BE DISTURBED OR WITHIN 100 FEET OF THE WELL PAD LOC.
- THERE ARE NO GENERAL STREAM IMPACTS THAT WILL NEED TO BE PERMITTED BY THE APPROPRIATE AGENCIES.
- THERE ARE NO INTERRUPTIONS, OR PERSONAL, STREAM IMPACTS WITHIN THE LOC.
- THERE ARE NO NATURALLY OCCURRING TRIBUTARY STREAMS WITHIN 800 FEET OF THE WELL PAD AND LOC.
- THERE ARE NO CIRCUMSTANTIAL SPRINGS OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD AND LOC.
- THERE ARE NO APPARENTLY EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 200 FEET OF THE WELL PAD AND LOC.
- THERE ARE NO OCCUPIED BUILDING STRUCTURES WITHIN 800 FEET OF THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 1,000 SQUARE FEET WITHIN 800 FEET OF THE CENTER OF THE WELL PAD.



**PROJECT CONTACTS:**

**ENGINEER/SURVEYOR:**  
GAI & ENVIRONMENTAL CONSULTANTS, INC.  
JOSEPH E. ROBINSON, P.E. - PROJECT MANAGER/REGISTERED  
OFFICE: (204) 493-3718 FAX: (204) 493-3077 CELL: (409) 354-8828

**ENVIRONMENTAL:**  
GAI CONSULTANTS  
JACOB COOK - PROJECT MANAGER  
OFFICE: (204) 493-3718 FAX: (204) 493-3077 CELL: (214) 794-1714

**GEOTECHNICAL:**  
GAI & ENVIRONMENTAL CONSULTANTS, INC.  
KEVIN EISENHART - PROJECT MANAGER  
OFFICE: (204) 493-3718 FAX: (204) 493-3077 CELL: (214) 794-1714

**OPERATOR:**  
ANTERO RESOURCES CORPORATION  
801 WHITE OAK BLVD.  
MUSKOGEE, WV 26040  
PHONE: (204) 493-3718  
FAX: (204) 493-3077

**CELL MANAGER - ENVIRONMENTAL & REGULATORY MANAGER:**  
OFFICE: (204) 493-3718 CELL: (204) 493-3718

**AMON RUNDLER - CONSTRUCTION MANAGER:**  
OFFICE: (204) 493-3718

**ROBERT WIRDS - DESIGN MANAGER:**  
OFFICE: (204) 493-3718 CELL: (204) 493-3718

**SCOTT GIFFER - UTILITY SUPERVISOR:**  
CELL: (204) 493-3718



**PLAN REPRODUCTION WARNING:**  
THE PLANS HAVE BEEN CREATED ON A 24" X 36" SCALE. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.  
THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ACCURATE FOR CONSTRUCTION PURPOSES.  
REPRODUCTION INFORMATION MAY BE LOST BY COPYING AND/OR GRAY SCALE PLOTTING.

**WEST VIRGINIA STATE LAW**  
REQUIRES THAT YOU CALL  
TWO BUSINESS DAYS  
BEFORE YOU DIG IN THE  
STATE OF WEST VIRGINIA.  
IT'S THE LAW.

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LIMITS OF DISTURBANCE PARCEL BREAK UPS - CASHEW WELL PAD						
RITCHIE & DODDRIDGE COUNTY, WEST VIRGINIA						
OWNER	TM-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACRAGE	
LAURENCE AND SON GARAGE	23-8	295-479	305.91	MAJOR ACCESS ROAD	0.36	
				WELL PAD	0.36	
				STAGING AREA 1	1.76	
				STAGING AREA 2	0.61	
				SPUR PAD 1	0.23	
				TOPSOIL/STOPPING PAD 1	2.24	
				PARCEL TOTAL	23.00	
LAURENCE AND SON GARAGE	84	102-491	340.12	PARCEL INFORMATION		
				MAJOR ACCESS ROAD	1.76	
				STAGING AREA 1	0.28	
				STAGING AREA 2	1.30	
				SPUR PAD 1	0.26	
				SPUR PAD 2	0.28	
				TOPSOIL/STOPPING PAD 1	1.24	
				PARCEL TOTAL	6.52	
LAURENCE AND SON GARAGE	23-4-1	359-479	17	PARCEL INFORMATION		
				MAJOR ACCESS ROAD	0.24	
				WELL PAD	0.24	
				PARCEL TOTAL	0.48	
LAURENCE AND SON GARAGE	23-7	231-477	62.76	PARCEL INFORMATION		
				WELL PAD	0.27	
				PARCEL TOTAL	0.27	
				TOTAL	30.24	

GRADING VOLUMES				
DESCRIPTION	CU (CY)	CU (CY)	CU (CY)	CU (CY)
MAJOR ACCESS ROAD	0.36	23.62	-23.62	
WELL PAD	0.36	0.79	-0.79	
STAGING AREA 1	1.76	0.21	-0.21	
STAGING AREA 2	0.61	0.47	-0.30	
SPUR 1	0	0.24	-0.24	
TOTAL	3.09	34.33	-25.16	
TOPSOIL STOPPING PAD (WELL PAD 1 & 2)		1,084.21		
TOTAL (WATERSHED)	3.09	34.33	-25.16	

L.O.D. AREAS	
DESCRIPTION	ACRES
MAJOR ACCESS ROAD	0.36
WELL PAD	0.36
STAGING AREA 1	1.34
STAGING AREA 2	1.22
SPUR PAD 1	0.23
SPUR PAD 2	0.28
TOPSOIL/STOPPING PAD 1	2.24
TOTAL	28.28
WOODS	24.87

CASHEW WELL LEGEND							
WELL HEAD LETTER	NAME	WV NORTH AD 27	WV NORTH AD E3	UTM-N	NAD 83	NAD 27	ELEVATION
A	SHAYS 3H	N 24794.846 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
B	SHAYS 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
C	ELKED 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
D	ELKED 2H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
E	SHAYS 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
F	SHAYS 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
G	ELKED 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
H	ELKED 2H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
I	ELKED 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
J	ELKED 2H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
K	ELKED 3H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98
L	ELKED 2H	N 24795.046 E 1432956.896	N 24274.408 E 1432954.292	N 433924.325 E 1432954.292	39° 57' 27.24"	39° 57' 26.98"	1018.98

STREAM IMPACT (LINEAR FEET)						
STREAM AND IMPACT CAUSE	TYPE OF STREAM	CULVERT	WELT/OUTLETS STRUCTURES (LF)	CONSTRUCTION DISTURBANCE TO LOC (LF)	TOTAL TEMPORARY IMPACT (FT)	TOTAL PERMANENT IMPACT (FT)
STREAM-43	EPHEMERAL	NO	0	78	0	0
STREAM-45	EPHEMERAL	NO	0	348	32	117
STREAM-46	EPHEMERAL	NO	0	33	33	0
TOTAL				459	65	117



**REVISION RECORD**

REV	DATE	DESCRIPTION
1	11/15/22	ISSUE FOR PERMITS
2	11/15/22	ISSUE FOR PERMITS
3	11/15/22	ISSUE FOR PERMITS
4	11/15/22	ISSUE FOR PERMITS
5	11/15/22	ISSUE FOR PERMITS
6	11/15/22	ISSUE FOR PERMITS
7	11/15/22	ISSUE FOR PERMITS
8	11/15/22	ISSUE FOR PERMITS
9	11/15/22	ISSUE FOR PERMITS
10	11/15/22	ISSUE FOR PERMITS
11	11/15/22	ISSUE FOR PERMITS
12	11/15/22	ISSUE FOR PERMITS
13	11/15/22	ISSUE FOR PERMITS
14	11/15/22	ISSUE FOR PERMITS
15	11/15/22	ISSUE FOR PERMITS
16	11/15/22	ISSUE FOR PERMITS
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42	11/15/22	ISSUE FOR PERMITS
43	11/15/22	ISSUE FOR PERMITS
44	11/15/22	ISSUE FOR PERMITS
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47	11/15/22	ISSUE FOR PERMITS
48	11/15/22	ISSUE FOR PERMITS
49	11/15/22	ISSUE FOR PERMITS
50	11/15/22	ISSUE FOR PERMITS

**COVER**

**ANTERO RESOURCES  
CASHEW WELL PAD  
UNION & SOUTHWEST DISTRICTS  
RITCHIE & DODDRIDGE COUNTY  
WEST VIRGINIA**

**Civil & Environmental Consultants, Inc.**  
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**DATE:** 11/15/22  
**DESIGNER:** JDR  
**DRAWN BY:** JDR  
**PROJECT NO.:** 112-1000  
**ISSUED BY:** JDR

**C000**