



west virginia department of environmental protection

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)

Friday, January 26, 2024  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

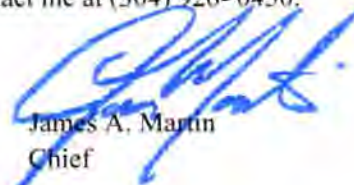
DENVER, CO 80202

Re: Permit approval for Mary Patterson Unit 5V  
47-095-02873-00-00

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.



James A. Martin  
Chief

Operator's Well Number: Mary Patterson Unit 5V  
Farm Name: Jimmy E Patterson, Earl P Patte  
U.S. WELL NUMBER: 47-095-02873-00-00  
Horizontal 6A New Drill  
Date Issued: 1/26/2024

Promoting a healthy environment.

01/26/2024



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west virginia department of environmental protection

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

**ORDER  
ISSUED UNDER  
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: Antero Resources Corporation  
1615 Wynkoop Street  
Denver, CO 80202

DATE: January 24, 2024  
ORDER NO.: 2024-W-3

**INTRODUCTION**

This Order (hereinafter “Order”) is issued by the Office of Oil and Gas (hereinafter “OOG”), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to Antero Resources Corporation (hereinafter “Antero” or “Operator”), collectively the “Parties.”

**FINDINGS OF THE CHIEF**

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. Antero is a “person” as defined by W. Va. Code §22-6-1(n), with a corporate address as 1615 Wynkoop Street, Denver, CO 80202.
3. On December 8, 2023, Antero submitted a well work permit application identified as API# 47-095-02873. The well is located on the Mary Patterson Pad in the Union District of Tyler County, West Virginia.
4. On January 12, 2024, Antero requested a waiver for Wetlands K, S, W and V as outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-095-02873.

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas 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 Office of Oil and Gas 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.”

## ORDER

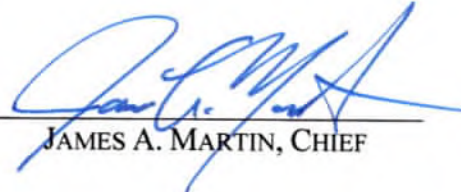
West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands K, S, W and V from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-095-02873. The Office of Oil and Gas hereby **ORDERS** that Antero shall meet the following site construction and operational requirements for the Mary Patterson Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetlands K, S, W and V shall be protected by the pad perimeter berm and two rows of forty-two inch (42”) SMART Fence. This along with temporary and permanent vegetative cover will prevent sediment from reaching the wetlands
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 24th day of January 2024.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:   
\_\_\_\_\_  
JAMES A. MARTIN, CHIEF

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: 47-095-02873

Operator's Well Number: \_\_\_\_\_

Well Operator: Antero Resources Corporation

Well Number: \_\_\_\_\_

Well Pad Name: Mary Patterson Well Pad

County, District, Quadrangle of Well Location: Tyler County, Middlebourne and Bens Run USGS Quads

**Answer the questions below to request a waiver from West Virginia Department of Environmental Protection for any wetlands or perennial streams which lie within one hundred feet of proposed project Limit of Disturbance (LOD), which includes any erosion and sediment control devices to be used.**

**This waiver shall be requested pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code, which states:**

§22-6A-12(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.

§22-6A-12(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.

01/26/2024

**Answer in the space provided, or use additional pages as necessary to fully answer the questions below:**

- 1. Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.**

The Mary Patterson Well Pad is located in Tyler County, West Virginia. The site is accessed from Dansers Lane Rd (CO RD 10). The proposed well pad elevation is approximately 695'. Topography of the site, including the area of the subject wetlands is level to gently sloping agricultural field that is actively used for hay production and livestock. This waiver is being sought for Wetland "K" (partial), Wetland "S", Wetland "V" and Wetland "W", shown on the plans. The area immediately upslope and within the limits of disturbance (LOD) of Wetlands "S", "V" and Wetland "W" is the fill slope of the proposed well pad and additional green space, respectively; however, there is and/or will be vegetation between the subject wetlands and toe of slope. Portions of existing vegetation will remain undisturbed immediately upslope of these wetlands. This provides a vegetative buffer, in addition to double E and S controls. The access road impacts 0.039 acre of Wetland "K", which is permitted and approved via a NWP 39. The remaining portion of Wetland "K" is in close proximity to the 100' buffer from the well pad footprint, but below the lease road.

- 2. Justify the proposed activity by describing alternatives to this project that were considered.**
  - a. Include a No-Action Alternative as to show "the future without the project"
  - b. Location Alternatives must be shown
  - c. Must demonstrate why a one hundred foot buffer cannot be maintained
  - d. Describe how the proposed project is the least environmentally damaging practicable alternative

- a. A no-action alternative would inhibit Antero's ability to develop their oil and gas mineral rights in the most efficient and safe manner, while minimizing environmental impacts. A no-action alternative would leave the wetland in it's current condition.
- b. Alternative options for the well pad location were reviewed. Option 1 was to develop the minerals from a location to the north of Middle Island Creek. This option would require a significant amount of timber and land disturbance. Option 2 was to shift the current location in the southerly direction, but would require additional impact to Wetland "K" and reduce the buffer between the LOD and Wetland "S".
- c. To achieve a 100' buffer between the well pad LOD and Wetlands "V" and "W", Wetland "K" would be fully impacted by the access road and well pad and the buffer between the pad LOD and Wetland "S" would be reduced. Additionally, establishing a 100' buffer would reduce the working space required to develop a stable site. The well pad footprint was oriented in a manner to avoid any impact to Wetlands "V" and "W" and reduce impact to Wetland "K", as much as reasonably possible.
- d. By utilizing existing field, we are able to develop the well pad site with minimal acreage of tree clearing. We are also able to maintain a vegetative buffer above Wetlands "K", "S", "V" and "W" that will help protect them, in addition to the planned double set of E and S controls.

- 3. Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.**

The wetlands will be protected by a double set of E and S controls to ensure the features' location is well protected and clearly visible. Additionally, the E and S controls will be marked in a way that clearly identifies the controls are protecting the subject features. A vegetative buffer upslope of the wetlands will also be maintained during and upon completion of construction.

E and S BMP's throughout the site are sequenced, sized and located in accordance with the West Virginia Erosion Control Manual.

During well operations on the Mary Patterson Well Pad, the well pad berm will ensure runoff does not directly flow toward these features. Pad sumps will be continuously monitored during operations, and tested prior to discharging.

- 4. Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.**
- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect these wetlands and/or perennial streams for which the waiver is sought.

The features for which the waiver is sought will be protected by a double set of E and S controls. Specifically, HD Smartfence is the control type to be installed, which is most similar in function to super silt fence. Super silt fence is intended to protect slopes longer than 400' and the slope lengths of drainage within the LOD toward the features are less than 400'.

Refer to the attached drawing excerpts from the design plans associated with the Mary Patterson Well Pad.







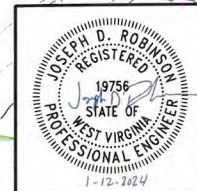
P:\130-001\130-1121-C000 (Dwg) (C01)\130-001-130-1121-C000 SITE PLAN.dwg (C01) LS(1/12/2024 - 2:16 PM) - LP: 1/12/2024 2:16 PM

NO	DATE	DESCRIPTION
1	11-28-23	ADDED 2024 AST TANK

**Civil & Environmental Consultants, Inc.**  
 120 Genesis Boulevard · Bridgeport, WV 26330  
 Ph: 304.933.3119 · 855.488.9539 · Fax: 304.933.3327  
 www.cecinc.com

**ANTERO RESOURCES MARY PATTERSON WELL PAD**  
**TYLER COUNTY WEST VIRGINIA**

DATE		DATE	DATE
DATE	JANUARY 2024	DRAWN BY:	QWK
DWG SCALE:		CHECKED BY:	DBS
PROJECT NO.:		APPROVED BY:	JDR
			332-412



01/26/2024

SCALE IN FEET  
0 50 100

DRAWING NO.: **C303**  
 SHEET 10 OF 38

# 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

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. 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. Also, 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.
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.

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

1) Well Operator: Antero Resources Corporation 494507062 095 - Tyler Union Middlebourne  
Operator ID County District Quadrangle

2) Operator's Well Number: Mary Patterson Unit 5V Well Pad Name: Mary Patterson Pad

3) Farm Name/Surface Owner: Wm. S. Patterson, Edith R. Patterson, A. Linda Lee Conroy Public Road Access: Dansers Lane

4) Elevation, current ground: 693' Elevation, proposed post-construction: 694'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6500' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6500' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 6500' MD

11) Proposed Horizontal Leg Length: 0'

12) Approximate Fresh Water Strata Depths: 84, 184, 234

13) Method to Determine Fresh Water Depths: 47-095-00081

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14) Approximate Saltwater Depths: 701

JAN 03 2024

15) Approximate Coal Seam Depths: None

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

WV Department of  
Environmental Protection

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: \_\_\_\_\_

*[Signature]*  
01/26/2024  
12-20-23

WW-6B  
(04/15)

API NO. **4709502873**  
 OPERATOR WELL NO. Mary Patterson Unit 5V  
 Well Pad Name: Mary Patterson Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100	100	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300	300	CTS, 313 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	6500	6500	710 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	50	Class A/L	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A/L	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A/L	~1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	12,630	2500	Class A/L	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

**PACKERS**

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

SEARCHED

JAN 03 2024

WV Department of Environmental Protection

*Mitch*  
01/26/2024  
12-20-23

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

Drill, perforate, fracture a new vertical shallow well and complete Marcellus Shale.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs  
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 32.49 acres

22) Area to be disturbed for well pad only, less access road (acres): 17.05 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers  
Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.  
Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.  
Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A/L cement.  
Surface: Class A/L cement with 2-3% calcium chloride and 1/4 lb of flake  
Intermediate: Class A/L 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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Division of Oil and Gas  
JAN 03 2024  
Department of Environmental Protection

25) Proposed borehole conditioning procedures:

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

\*Note: Attach additional sheets as needed.

01/26/2024  
12-20-27

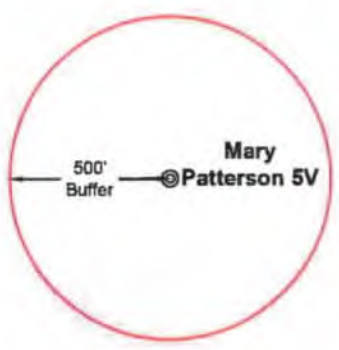
4709502873

**LEGEND**

- ⊙ Proposed gas well
- ⊛ Existing Well, as noted
- ⊛ Digitized Well, as noted



The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone



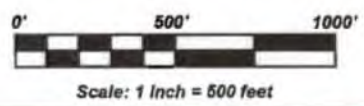
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Environmental Protection



Bridgeport Office Phone: (304) 848-5035 Fax: (304) 848-5037	172 Thompson Drive Bridgeport, WV 26330
PARTY CHIEF: C. Lynch	DRAWN BY: J. Smith
RESEARCH: J. Miller	PREPARED: September 13, 2023
SURVEYED: Dec. 2016	PROJECT NO: 169-54-L-23
FIELD CREW: C.L., K.M.	Sheet 1 of 1 DRAWING NO Mary Patterson 5V AOR



01/26/2024

4709502873



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

December 6th, 2023

West Virginia Office of Oil and Gas  
Attn: Taylor Brewer  
601 57<sup>th</sup> St SE  
Charleston, WV 25304

RE: Request for Variance – Class L Cement  
Mary Patterson Unit 5V  
Tyler County, WV

Mr. Brewer:

Pursuant to 35CSR8 Section 9.2.h.8, Antero Resources Corporation ("Antero") would like to implement the variance to allow Class L Cement in place of Class A cement relating to the construction of the following horizontal well (Mary Patterson Unit 5V) on the Mary Patterson pad.

Antero only plans to use this method if Class A cement is not available to be use due to supply issues. Please see Order No 2022-14 attached.

If you have any questions or need further information, please feel free to contact Mallory Turco, Permitting Manager, at (303) 357-7182 or email at [mturco@anteroresources.com](mailto:mturco@anteroresources.com).

Sincerely,

A handwritten signature in black ink that reads "Carly Marvel". The signature is written in a cursive, flowing style.

Carly Marvel  
Permitting Agent  
Antero Resources Corporation

RECEIVED  
Office of Oil and Gas

JAN 03 2024

WV Department of  
Environmental Protection

01/26/2024





west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Phone (304) 828-0450

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

**BEFORE THE OFFICE OF OIL AND GAS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE OF WEST VIRGINIA**

**IN THE MATTER OF A VARIANCE FROM )  
LEGISLATIVE RULE 35CSR4 )  
SECTION 11.5 AND LEGISLATIVE RULE )  
35CSR8 SECTION 9.2.h.8., )  
RELATING TO THE CEMENTING )  
OF OIL AND GAS WELLS )**

**ORDER NO. 2022-14** RECEIVED  
Office of Oil and Gas

JAN 03 2024

Wv Department of  
Environmental Protection

**REPORT OF THE OFFICE**

In response to industry requests, the West Virginia Department of Environmental Protection, Office of Oil and Gas has reviewed the proposed use of American Petroleum Institute (API) Class L cement to be used in place of API Class A cement for well construction.

**FINDINGS OF FACT**

1. On July 14, 2022, Northeast Natural Energy (NNE) submitted a variance request from Legislative Rule 35CSR8 Section 9.2.h.8., for the use of API Class L cement in place of API Class A cement, relating to the construction of horizontal wells.
2. Laboratory analysis submitted by NNE on July 14, 2022, indicates API Class L cement is comparable to API Class A cement and thereby satisfies the requirements of the West Virginia Code.
3. Contemporaneously, the Chief of the Office of Oil and Gas also chose to consider a variance to Legislative Rule 35CSR4 Section 11.5., for the use of API Class L cement in place of API Class A cement, relating to the construction of vertical wells.

promoting a healthy environment

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4. On August 18, 2022, the Office of Oil and Gas provided public notice of acceptance of public comments on the variance consideration. During the 20-day public comment period, no comments were received.

#### CONCLUSIONS OF LAW

Pursuant to Article 6 and Article 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to Legislative Rule 35CSR4, Section 18 and Legislative Rule 35CSR8, Section 14, the Chief of the Office of Oil and Gas may grant a variance from any requirement of these rules.

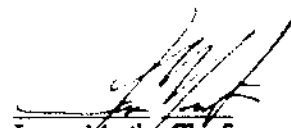
#### ORDER

It is ordered that the Class L cement product approved and monogrammed by API is approved for use in place of API Class A cement for well construction subject to the provisions of Legislative Rule 35CSR4 and Legislative Rule 35CSR8.

Dated this, the 13th day of September, 2022.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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

  
James Martin, Chief  
Office of Oil and Gas

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WW-9  
(4/16)

API Number 47 - 008

Operator's Well No. Mary Pollution Unit BY

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Aniso Resources Corporation OP Code 494507082

Waterbed (HUC 10) Outlet Middle Island Creek Quadrangle Middlebourne

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 filtered and loaded off site.)

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC Permit # will be provided on Form WR-34 )
- Reuse (at API Number Future permitted well locations when applicable. APIS will be provided on Form WR-34 )
- Off Site Disposal (Supply form WW-9 for disposal location) Meadowfill Landfill Permit #SWF-1032-08/ Northwestern Landfill Permit #SWF-1025/ WV0109410
- Other (Explain Wetzel Co 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.

-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-1032-08), Northwestern Landfill (Permit # SWF-1025/WV0109410) Wetzel Co 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

Company Official (Typed Name) Gretchen Kohler

Company Official Title Director of Environmental & Regulatory Compliance

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WV Department of Environmental Protection

Subscribed and sworn before me this 30 day of November, 2023

Carly Rayne Marvel

Notary Public

My commission expires 10-5-2026

CARLY RAYNE MARVEL  
Notary Public  
State of Colorado  
Notary ID # 20224038733  
My Commission Expires 10-05-2026

01/26/2024

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Form WW-9

Operator's Well No. Mary Patterson Unit 5V

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 32.49 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

Main Access Road (8.5 acres) + Camper Access Road (2.82 acres) + Well Pad (17.05 acres) + Spoil Piles (4.12 acres) = 32.49 Acres

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
Field Bromegrass	40	Tall Fescue	30
<small>See attached Table IV-3 for additional seed type (Mary Patterson Pad Design)</small>		<small>See attached Table IV-4A for additional seed type (Mary Patterson Pad Design)</small>	
*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: properly reclaim, seed, & mulch all disturbed areas.

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Environmental Protection

Title: WV Oil & Gas Inspector Date: 12-20-23

Field Reviewed?  Yes  No

01/26/2024

**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 Concor 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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Environmental Protection

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**911 Address**  
**293 Dansers Lane,**  
**Friendly, WV 26146**

## **Well Site Safety Plan**

### **Antero Resources**

**Well Name: Mary Patterson Unit 5V**

**Pad Location: Mary Patterson PAD**  
Tyler County/Union District

**GPS Coordinates:**

**Entrance** - Lat 39.477474/Long -80.993033 (NAD83)

**Pad Center** - Lat 39.484022/Long -80.993794 (NAD83)

**Driving Directions:**

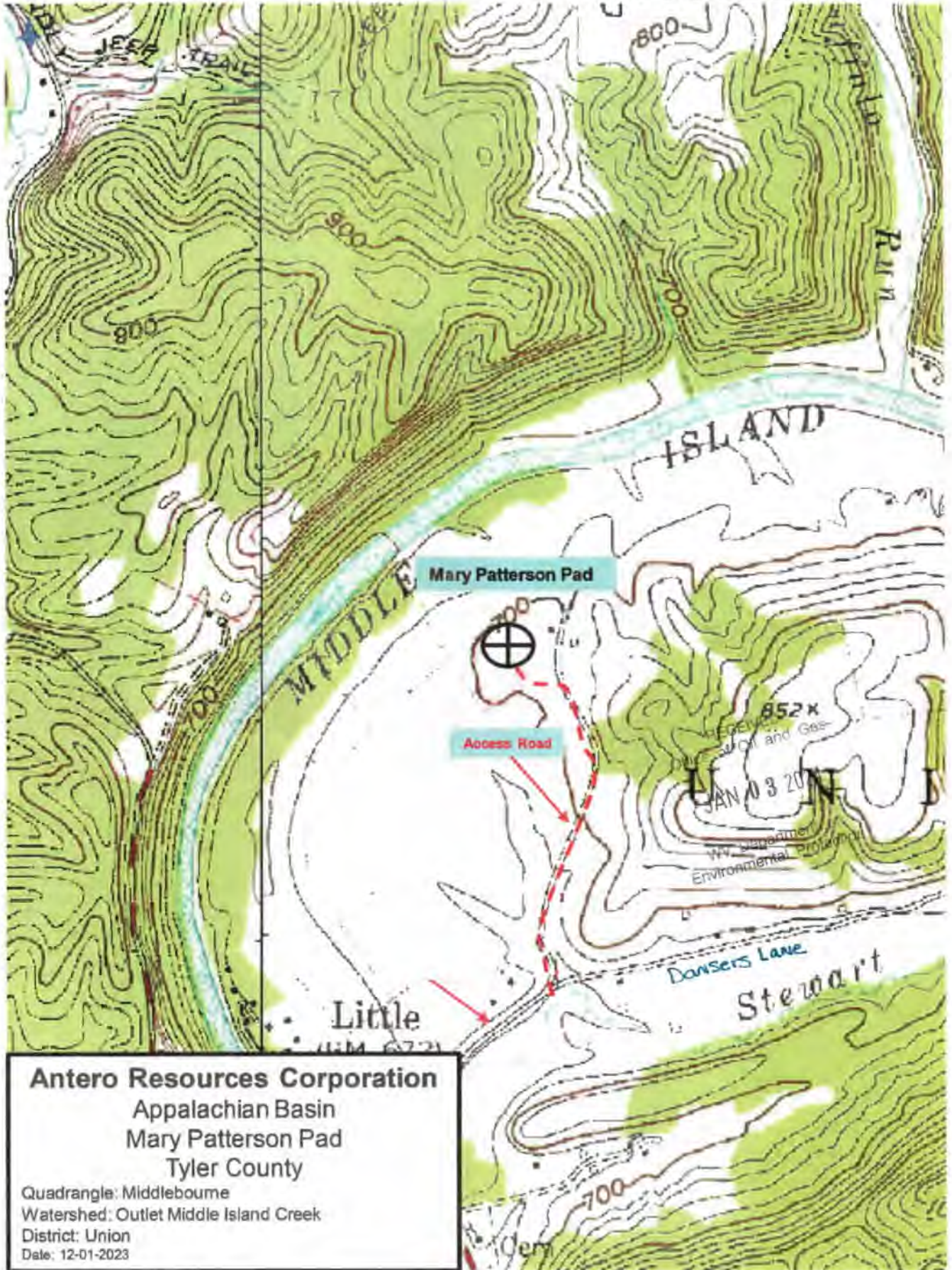
From WV18, turn east onto CO. 2/4 and travel for 0/1 miles. Turn left onto CO. 24 (Sellers Road) and travel for 3.4 miles. Turn left onto CO. 10/1 and continue for 2.0 miles. Veer left onto CO. 10 and travel 0.8 miles. The entrance to the lease road will be on the right.

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

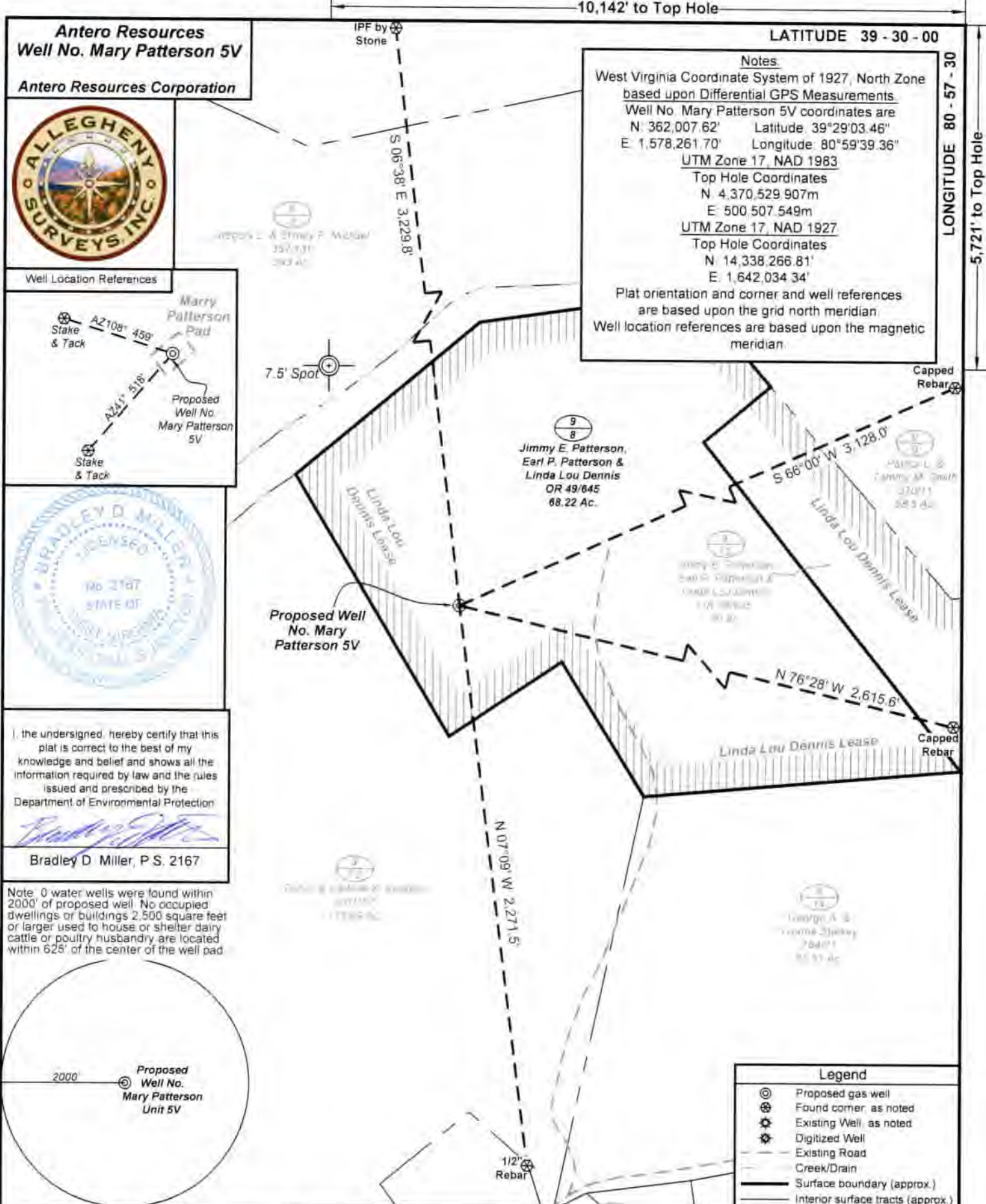
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*[Signature]*  
11-20-23

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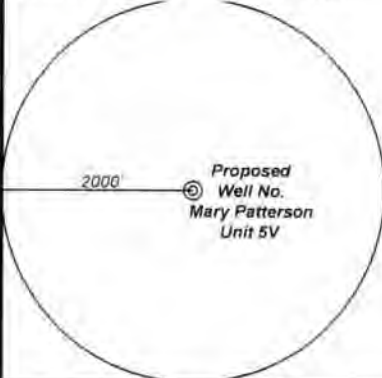
**Antero Resources**  
Well No. **Mary Patterson 5V**  
Antero Resources Corporation



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

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

Note: 0 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad



**LATITUDE 39 - 30 - 00**  
**LONGITUDE 80 - 57 - 30**

Notes  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements  
Well No. Mary Patterson 5V coordinates are  
N: 362,007.62' Latitude: 39°29'03.46"  
E: 1,578,261.70' Longitude: 80°59'39.36"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates  
N: 4,370,529.907m  
E: 500,507.549m  
UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N: 14,338,266.81'  
E: 1,642,034.34'

Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.

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

FILE NO: 169-54-U-23  
DRAWING NO: Mary Patterson 5V Well Plat  
SCALE: 1" = 500'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: September 22, 2023  
OPERATOR'S WELL NO: Mary Patterson Unit 5V  
API WELL NO: 47-095-02873  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Proposed Grade 694' Existing Grade 693' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne  
DISTRICT: Union Jimmy E. Patterson, Earl P. Patterson & Linda Lou Dennis COUNTY: Tyler 01/26/2024  
SURFACE OWNER: ACREAGE: 68.22

ROYALTY OWNER: Linda Lou Dennis LEASE NO: ACREAGE: 98.225

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ 6,500' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,500' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
Denver, CO 80202 Bridgeport, WV 26330

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

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

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

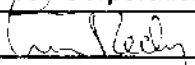
Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Linda Lou Dennis Lease:</u>				
	Linda Lou Dennis	Antero Resources Corporation	1/8+	234/5

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

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

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

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

Well Operator: Antero Resources Corporation  
 By: Tim Rady   
 Its: Senior Vice President of Land

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

December 4, 2023

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: Mary Patterson Unit 5V  
Quadrangle: Middlebourne  
Tyler County/Union District, West Virginia

Mr. Martin:

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

Sincerely,

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

Tyler Skavdahl  
Landman

01/26/2024

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

Date of Notice Certification: 12/05/2023

API No. 47- 095

Operator's Well No. Mary Patterson Unit 5V

Well Pad Name: Mary Patterson 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>500507m</u>
County: <u>Tyler</u>		Northing: <u>4370530m</u>
District: <u>Union</u>	Public Road Access: <u>Dansers Lane</u>	
Quadrangle: <u>Middlebourne</u>	Generally used farm name: <u>Jimmy E. Patterson, Earl P. Patterson, &amp; Linda Lou Dennis</u>	
Watershed: <u>Outlet Middle Island Creek</u>		

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

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:  *PLEASE CHECK ALL THAT APPLY		<b>OOG OFFICE USE ONLY</b>
<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"/> RECEIVED/ NOT REQUIRED
<input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED		<input type="checkbox"/> RECEIVED
<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"/> RECEIVED/ NOT REQUIRED
<input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION		<input checked="" type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 5. PUBLIC NOTICE		<input checked="" type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<input checked="" type="checkbox"/> RECEIVED

**Required Attachments:**

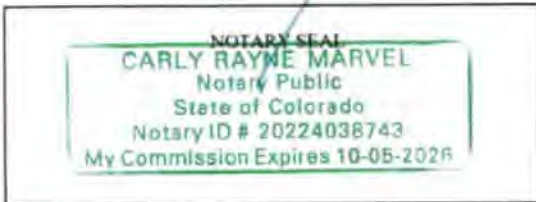
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

01/26/2024

**Certification of Notice is hereby given:**

THEREFORE, I Jon McEvers, 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>Jon McEvers</u> <i>Jon McEvers</i>		<u>Denver, CO 80202</u>
Its:	<u>Senior VP of Operations</u>	Facsimile:	<u>303-357-7373</u>
Telephone:	<u>303-357-6799</u>	Email:	<u>cmarvel@anteroresources.com</u>



Subscribed and sworn before me this 28 day of NOV. 2023  
Carly Rayne Marvel Notary Public  
 My Commission Expires 10-5-2026

**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 [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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

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

Date of Notice: 12/6/2023 Date Permit Application Filed: 12/6/2023

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: Ted A. & Darlene K. Koerber  
Address: 173 Danaers Lane  
Friendly, WV 26146

Name: Jimmy E. Patterson, Earl P. Patterson, and Linda Lou Dennis  
Address: 5516 Cow House Road  
Sisterville, WV 26175

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: NO WATER WELLS OR SPRINGS FOUND WITHIN 1500' OF PAD  
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.

4709502873

WW-6A  
(8-13)

API NO. 47-095 -  
OPERATOR WELL NO. Mary Patterson Unit 5V  
Well Pad Name: Mary Patterson Pad

Notice is hereby given by:

Well Operator: Antero Resources Corporation *Jan McEwen* Address: 1615 Wynkoop Street  
Telephone: (303) 357-7373 Denver, CO 80202  
Email: cmarvel@anteroresources.com Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

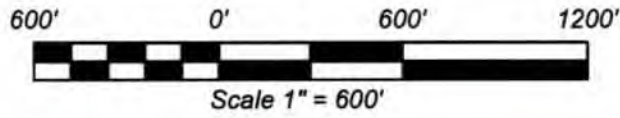
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of 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 Nov, 2023.  
Carly Rayne Marvel Notary Public  
My Commission Expires 10-5-210

01/26/2024

# Mary Patterson Drill Pad Water Well Map



TM 9 Par 2  
Mathew A. &  
Brandy Rae Hayes

TM 9 Par 3  
Gregory L. &  
Shirley F. Michael

TM 9 Par 9  
Patrick L. &  
Tammy M. Smith

Center of  
Proposed  
Mary Patterson  
Pad

TM 9 Par 8  
Jimmy E. Patterson,  
Earl P. Patterson &  
Linda Lou Dennis

2000'

TM 9 Par  
12  
Jimmy E.  
Patterson,  
Earl P.  
Patterson &  
Linda  
Lou  
Dennis

TM 9 Par 7.2  
Ted A. & Darlene K.  
Koerber

TM 9 Par 14  
George A. &  
Yvonne Starkey

Note

No Water wells or springs found within 2,000' of pad

4709502873

**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:** 11/08/2023      **Date Permit Application Filed:** 12/06/2023

**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: Ted A. & Darlene K. Koerber  
Address: 173 Dansers Lane  
Friendly, WV 26146

Name: Jimmy E. Patterson, Earl P. Patterson, and Linda Lou Dennis  
Address: 5515 Cow House Road  
Sisterville, WV 26175

**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>500507m</u>
County:	<u>Tyler</u>		Northing:	<u>4370530m</u>
District:	<u>Union</u>	Public Road Access:	<u>Dansers Lane</u>	
Quadrangle:	<u>Middlebourne</u>	Generally used farm name:	<u>Jimmy E. Patterson, Earl P. Patterson and Linda Lou Dennis</u>	
Watershed:	<u>Outlet Middle Island Creek</u>			

**This Notice Shall Include:**

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

**Notice is hereby given by:**

Well Operator: Antero Resources Corporation  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephone: 303-357-7182  
Email: mturco@anteroresources.com  
Facsimile: 303-357-7315

Authorized Representative: Mallory Turco  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephone: 303-357-7182  
Email: mturco@anteroresources.com  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

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

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

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

**Date of Notice:** 12/06/2023      **Date Permit Application Filed:** 12/06/2023

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

- CERTIFIED MAIL                                       HAND
- RETURN RECEIPT REQUESTED                                      DELIVERY

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

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

(at the address listed in the records of the sheriff at the time of notice):

Name: Ted A. & Darlene K. Koerber  
Address: 173 Dansers Lane  
Friendly, WV 26146

Name: Jimmy E. Patterson, Earl P. Patterson, and Linda Lou Dennis  
Address: 5516 Cow House Road  
Sisterville, WV 26175

**Notice is hereby given:**

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

State: <u>West Virginia</u> County: <u>Tyler</u> District: <u>Union</u> Quadrangle: <u>Middlebourne</u> Watershed: <u>Outlet Middle Island Creek</u>	UTM NAD 83    Easting: <u>500507m</u> Northing: <u>4370530m</u> Public Road Access: <u>Dansers Lane</u> Generally used farm name: <u>Jimmy E. Patterson, Earl P. Patterson &amp; Linda Lou Dennis</u>
--	--

**This Notice Shall Include:**

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

Well Operator: Antero Resources Corporation  
Telephone: 303-357-7373  
Email: cmarvel@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7310

**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).

4709502873



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

Office of the District Engineer/Manager  
District Four

Post Office Box 4220 · Clarksburg, West Virginia 26302 · (304) 842-1500

Alanna J. Keller, P.E.  
Deputy Secretary of Transportation  
Deputy Commissioner of Highways

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

December 7, 2023

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 Mary Patterson Well Pad, Tyler County  
Mary Patterson Unit 5V Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit 06-2023-0548 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off Tyler County Route 10 SLS MP 0.18.

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 March 6, 2023. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

A handwritten signature in blue ink, appearing to read "Stephen G. Johnson".

Stephen G. Johnson, P.E.  
Director of Operations

Cc: Carly Marvel  
Antero Resources  
OM, D-6  
File

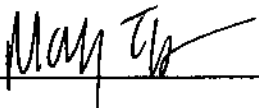
# List of Anticipated Additives Used for Fracturing or Stimulating Well 4709502873

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

RECEIVED  
Office of Oil and Gas  
DEC 08 2023  
www.Environmental Protection  
Department of

OPERATOR: Antero Resources Corp. WELL NO: Mary Patterson Unit 5V

PAD NAME: Mary Patterson Pad

REVIEWED BY: Mallory Turco SIGNATURE: 

### WELL RESTRICTIONS CHECKLIST

#### HORIZONTAL 6A WELL

#### Well Restrictions

- At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR  
 DEP Waiver and Permit Conditions
- At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR  
 DEP Waiver and Permit Conditions
- At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR  
 DEP Waiver and Permit Conditions
- At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR  
 Surface Owner Waiver and Recorded with County Clerk, OR  
 DEP Variance and Permit Conditions
- At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR  
 Surface Owner Waiver and Recorded with County Clerk, OR  
 DEP Variance and Permit Conditions
- At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR  
 Surface Owner Waiver and Recorded with County Clerk, OR  
 DEP Variance and Permit Conditions



SITE LOCATIONS	LOCATION COORDINATES			
	N 85511 WV-NF (NORTH ZONE)		UTM83-17M	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD ENTRANCE	39.477474	-80.993033	4369764.586	500599.168
CENTROID OF WELL PAD	39.484022	-80.993794	4370491.280	500533.667
CENTROID OF 22/26# AST	39.484106	-80.984904	4370500.547	500438.233

# MARY PATTERSON PERMIT SITE ANTERO RESO

LAT./LONG: N 39 484022° W  
(APPROXIMATE CENTER O

### GENERAL DESCRIPTION:

THE ACCESS ROAD AND WELL PAD ARE BEING CONSTRUCTED TO AD IN THE DEVELOPMENT OF MARCELLUS (SHALE GAS) WELLS.

### FLOODPLAIN NOTES:

THE PROPOSED SITE LOCATION ENTRANCE IS WITHIN A FLOOD ZONE OF MIDDLE ISLAND CREEK AND STEWART RUN. PER FEMA MAP NUMBER(S) #54095C0150C.

### MISS UTILITY STATEMENT:

ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THE PROJECT DESIGN. TICKET #2220952732. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

### ENTRANCE PERMIT:

CIVIL AND ENVIRONMENTAL CONSULTANTS AND ANTERO RESOURCES WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-100) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

### ENVIRONMENTAL NOTES:

STREAM AND WETLAND DELINEATIONS WERE PERFORMED BY **CIVIL & ENVIRONMENTAL CONSULTANTS, INC.** (ON 4/28/23, 4/27/23, 5/1/23, AND 5/3/23). **CIVIL & ENVIRONMENTAL CONSULTANTS, INC.** PREPARED A STREAM AND WETLAND DELINEATION MAP WHICH VERIFIES 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 WDEP. IT IS STRONGLY RECOMMENDED THAT THE AFOREMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO OBTAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THE EXHIBIT PRIOR TO ENGAGING IN CONSTRUCTION ON THE PROPERTIES DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATER OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

### GEOTECHNICAL NOTES:

THE GEOTECHNICAL ANALYSIS WAS PERFORMED BY **CIVIL & ENVIRONMENTAL CONSULTANTS, INC.** AND SUMMARIZES THE FIELD TESTING AND EXPLORATION.

### PROJECT CONTACTS:

#### OPERATOR:

**ANTERO RESOURCES CORPORATION**  
530 WHITE OAKS BLVD  
BRIDGEPORT, WV 26330  
PHONE: (304) 842-4100  
FAX: (304) 842-4100

ELI WAGNER - ENVIRONMENTAL &  
REGULATORY MANAGER  
OFFICE: (304) 842-4099 CELL: (304) 478-8772

AARON KUNDLER - CONSTRUCTION MANAGER  
OFFICE: (304) 842-4197

ROBERT WIRKS - DESIGN MANAGER  
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SCOTT HOFFER - UTILITY SUPERVISOR  
CELL: (304) 815-8888

JIM WILSON - LAND AGENT  
CELL: 304-871-2708

JON McVEYERS - SVF OPERATIONS  
OFFICE: 303-367-6796

#### ENGINEER/SURVEYOR:

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**  
JOSEPH D. ROBINSON, PE - PROJECT MANAGER/ENGINEER  
OFFICE: (304) 893-3118 FAX: (304) 893-3327 CELL: (304) 388-2888

#### ENVIRONMENTAL:

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**  
JACQUELYN D. KESTER - PRINCIPAL  
OFFICE: (304) 893-3118 DIRECT: (304) 848-7122

#### GEOTECHNICAL:

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**  
KOW ESHLUN, PE - VICE PRESIDENT  
OFFICE: (304) 893-3119 DIRECT: (304) 848-7142 CELL: (319) 774-7778



### LOCATION MAP

MIDDLEBOURNE AND BENS RUN

SCALE IN FEET

1000  
1 INCH = 1000 FEET



### VICINITY

TYLER COUNTY HIGH

SCALE IN FEET

1 MILE  
1 INCH = 1 MILE

### PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON A89-D 22" X 34" SHEETS 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 ADEQUATE FOR CONSTRUCTION PURPOSES.

\*\*WARNING\*\* INFORMATION MAY BE LOST IN COPYING AND/OR 1/8" SCALE PLOTTING.



WEST VIRGINIA  
REGULATORY  
DIVISION  
STATE

01/26/2024

# WELL PAD PLAN RESOURCES

30.993794°  
PROJECT)



S 7.5' QUADS



MAP

MILES



VA STATE LAW  
WHAT YOU CALL  
BUSINESS DAYS  
YOU DIG IN THE  
WEST VIRGINIA  
THE LAW!

### SHEET INDEX

C000 COVER SHEET	C006 PROFILES AND SECTIONS	C007 DETAILS
C001 GENERAL NOTES	C007 PROFILES AND SECTIONS	C008 DETAILS
C002 MATERIAL QUANTITIES	C008 PROFILES AND SECTIONS	C002 OVERALL RECLAMATION PLAN
C003 MASTER LEGEND	C009 PROFILES AND SECTIONS	C007 RECLAMATION PLAN
C100 EXISTING CONDITIONS	C010 PROFILES AND SECTIONS	C002 RECLAMATION PLAN
C200 OVERALL SITE PLAN	C011 PROFILES AND SECTIONS	C003 RECLAMATION PLAN
C201 SITE PLAN	C012 PROFILES AND SECTIONS	
C202 SITE PLAN	C013 PROFILES AND SECTIONS	
C203 SITE PLAN	C000 DETAILS	
C600 PROFILES AND SECTIONS	C001 DETAILS	
C601 PROFILES AND SECTIONS	C002 DETAILS	
C602 PROFILES AND SECTIONS	C003 DETAILS	
C603 PROFILES AND SECTIONS	C004 DETAILS	
C604 PROFILES AND SECTIONS	C005 DETAILS	
C605 PROFILES AND SECTIONS	C006 DETAILS	

### RESTRICTIONS NOTES

- THERE ARE NO LAKES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LID.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LID.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD AND LID.
- THERE ARE NO APPOINTMENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL PAD.
- THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 800 FEET OF THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,000 SQUARE FEET WITHIN 800 FEET OF THE CENTER OF THE WELL PAD.

### GRADING VOLUMES

DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
MAIN ACCESS ROAD	4,505	5,296	-891
WELL PAD	42,313	36,775	5,538
CAMPER ACCESS	89	2,110	-2,021
SPOIL (MIXED PILE)	0	2,526	-2,526
<b>TOTAL</b>	<b>46,707</b>	<b>46,707</b>	<b>0</b>
TOPSOIL / STRIPPING WITH 20% SWELL		22,526 C.Y.	15,105 C.Y.
<b>TOTAL EXCAVATION</b>	<b>65,812</b>	<b>65,812</b>	<b>0</b>

### LIMITS OF DISTURBANCE PARCEL BREAK UPS - MARY PATTERSON WELL PAD

TYLER COUNTY, WEST VIRGINIA					
OWNER	TM-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACERAGE
KATHY SUE HERRON	9-7	351-345	5.49	PARCEL INFORMATION	
				MAIN ACCESS ROAD	1.13
				PARCEL TOTAL	1.13
TED A. AND GARLENE K. KOSBER	9-7-3	301-157	112.09	PARCEL INFORMATION	
				MAIN ACCESS ROAD	5.93
				WELL PAD	3.96
JIMMY E. EARL P. DENNIS, AND LINDA LOU PATTERSON	9-8	0849-157	68.22	PARCEL INFORMATION	
				MAIN ACCESS ROAD	1.44
				CAMPER ACCESS ROAD	2.82
				WELL PAD	13.09
				SPOIL PILE	4.13
				PARCEL TOTAL	21.47
				<b>TOTAL</b>	<b>32.49</b>

### L.O.D. AREAS

DESCRIPTION	ACRES
MAIN ACCESS ROAD	8.50
CAMPER ACCESS ROAD	2.82
WELL PAD	17.05
SPOIL PILE	4.12
<b>TOTAL</b>	<b>32.49</b>
WOODED	6.76

### MARY PATTERSON WELL LEGEND

WELL HEAD LETTER	WELL NAME	ELEVATION	WV NORTH NAD 27	WV NORTH NAD 83	NAD 83 UTM 17M	NAD 83	NAD 27
			N. 302808.200 E. 1570284.013	N. 802942.248 E. 2348483.861	N. 4399530.098 E. 300801.831	89° 29' 03.74" 80° 58' 38.70"	89° 29' 03.67" 80° 58' 38.37"
2	MARY PATTERSON W	994.20'					

### STREAM IMPACT TABLE

STREAM	STREAM CLASS	DHW		IMPACT	PERMANENT (LF)	TEMPORARY (LF)	PERMANENT IMPACT AREA	TOTAL LENGTH (LF)
		WIDTH	DEPTH					
CEC_STREAM_1	INTERMITTENT	2.25	0.5	ACCESS ROAD	51	25	0.003	76
CEC_STREAM_7	INTERMITTENT	1.00	0.33	ACCESS ROAD	24	22	0.001	46
CEC_STREAM_17_MOD	PERENNIAL	6.00	1	ACCESS ROAD	103	198	0.014	301
CEC_STREAM_18_MOD	PERENNIAL	3.00	0.5	ACCESS ROAD	119	21	0.008	140
<b>TOTALS</b>					<b>297</b>	<b>256</b>	<b>0.026</b>	<b>563</b>

### WETLAND IMPACT TABLE

WETLAND	IMPACT	PERMANENT (AC)	TEMPORARY (AC)	TOTAL AREA (AC)
CEC_WETLAND_A	ACCESS ROAD	0.029	0	0.029
CEC_WETLAND_B	ACCESS ROAD	0.003	0	0.003
CEC_WETLAND_C	ACCESS ROAD	0.003	0	0.003
CEC_WETLAND_E	ACCESS ROAD	0.043	0	0.043
CEC_WETLAND_X	ACCESS ROAD	0.039	0	0.039
<b>TOTALS</b>		<b>0.117</b>	<b>0</b>	<b>0.117</b>



NO.	DATE	DESCRIPTION

*Handwritten signature and date:*  
11-20-23

**Antero Resources**  
**Civil & Environmental Consultants, Inc.**  
120 Geneale Boulevard Bridgeport, WV 26330  
Ph: 304.933.3119 - 855.486.9529 - Fax: 304.933.3327  
WWW.ANTERO.COM

**ANTERO RESOURCES**  
**MARY PATTERSON WELL PAD**  
**TYLER COUNTY**  
**WEST VIRGINIA**

**COVER SHEET**

DATE: SEPTEMBER 2023 (ISSUED BY)  
DRAWING NO.: 332-412  
PROJECT NO.:  
ISSUED BY: JDR

C000

01/26/2024

JIMMY E. PATTERSON, DENISE AND LINDA LO...  
TAX MAP 9  
DEED BOOK 08...  
88.22



NORTH

C303

IMPAIRED WATER  
22K BBL AST TANK  
28K BBL SECONDARY CONTAINMENT  
(W/110% CONTAINMENT)  
ELEVATION = 694.07  
CENTROID TANK LOCATION  
NAD83 LAT = 39.484108  
NAD83 LON = -80.994904

WELL PAD  
ELEVATION = 694.76'  
CENTROID LOCATION  
NAD83 LAT = 39.484022  
NAD83 LON = -80.993794

TED A. AND  
DARLENE K. KOEHLER  
TAX MAP 9 PARCEL 7.2  
DEED BOOK 301 PAGE 137  
112.09 ACRES

MIDDLE BLAND CREEK

C301

KATHY SUE HERRON  
TAX MAP 9 PARCEL 7  
DEED BOOK 351 PAGE 545  
5.47 ACRES

MAIN ACCESS ROAD  
ENTRANCE  
NAD83 LAT = 39.477474  
NAD83 LON = -80.993033

411330-0001332-112-C0011001133212-001-C200 007 PLAN 00100133212-001-0001 - 0001 - 001 - 11/26/2024 10:27 AM

01/26/2024

4 EARL P. PATTERSON  
TAX MAP 9 PARCEL 157  
58.5 ACRES

PATRICK L. SMITH AND  
TAMMY H. SMITH  
TAX MAP 9 PARCEL 9  
DEED BOOK 370 PAGE 11  
58.5 ACRES

JIMMY E. PATTERSON, EARL P.  
PATTERSON, DENNIS PATTERSON  
AND LINDA LOU PATTERSON  
TAX MAP 9 PARCEL 12  
DEED BOOK 0478 PAGE 645  
30.00 ACRES

SPOIL PILE 1 (MIXED)  
TOPSOIL/STRIPPING NEEDED:  
22,926 C.Y.  
SPOIL NEEDED: 2,526 C.Y.  
TOTAL CAPACITY: 25,452 C.Y.

GEORGE ALAN AND  
YVONNE STANLEY  
TAX MAP 9 PARCEL 14  
DEED BOOK 184 PAGE 21  
65.51 ACRES

C302

NO.	DATE	DESCRIPTION

*Handwritten:* 12-20-21  
*Signature:*



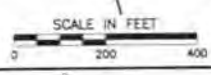
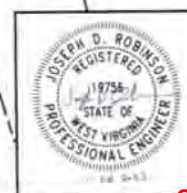
**Civil & Environmental Consultants, Inc.**  
120 Genesis Boulevard - Bridgeport, WV 26330  
Ph: 304.933.3119 - 855.488.9539 - Fax: 304.933.3327  
WWW.C&E.CONSULT.COM

**ANTERO RESOURCES  
MARY PATTERSON WELL PAD  
TYLER COUNTY  
WEST VIRGINIA**

OVERALL SITE PLAN

DATE	SEPTEMBER 2023	DRAWN BY	SB
DESIGNED BY		CHECKED BY	ER
PROJECT NO.	302-412	APPROVED BY	JDR

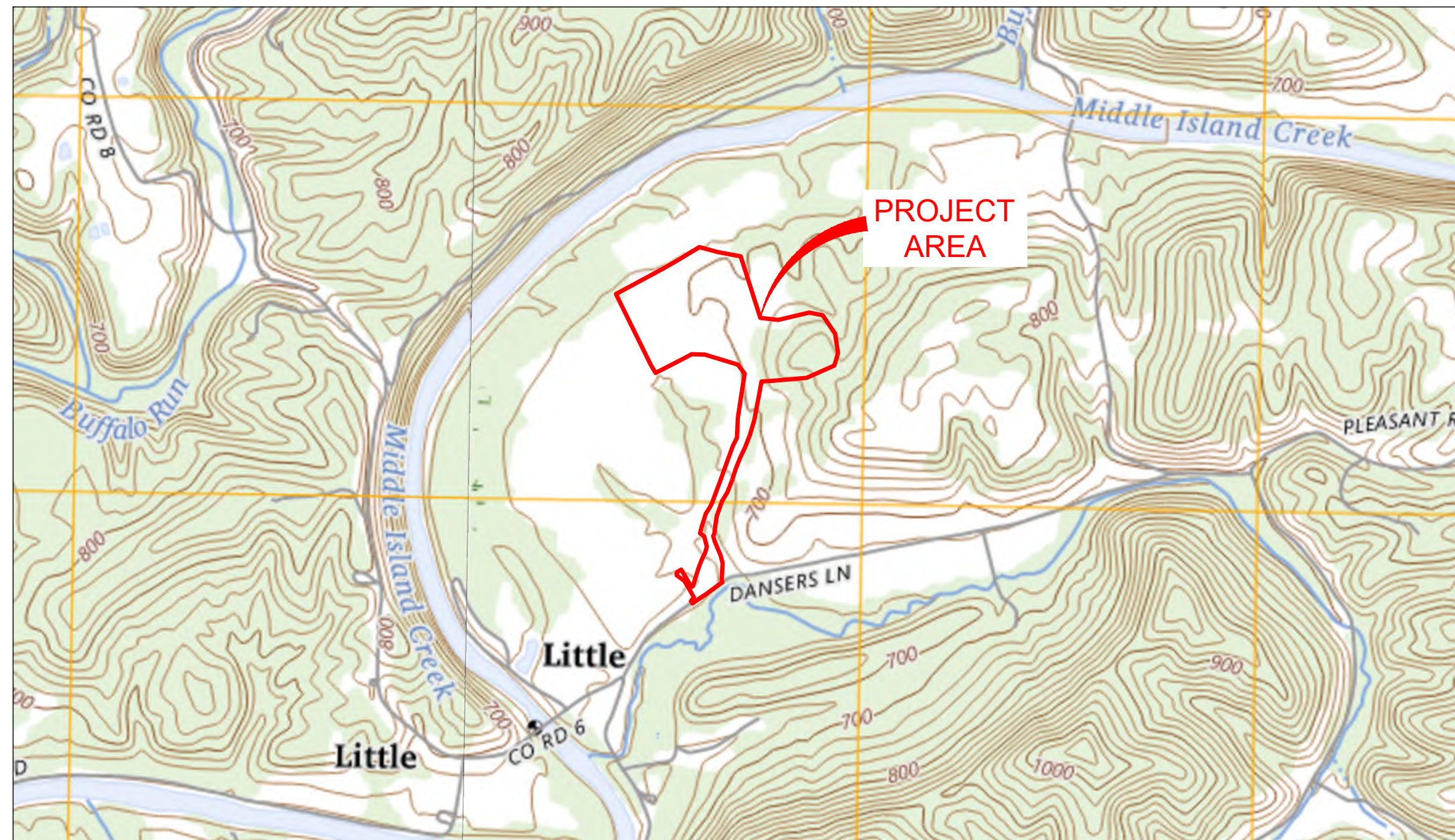
**C300**



01/26/2024

# MARY PATTERSON WELL PAD ISSUED FOR BID PLANS ANTERO RESOURCES

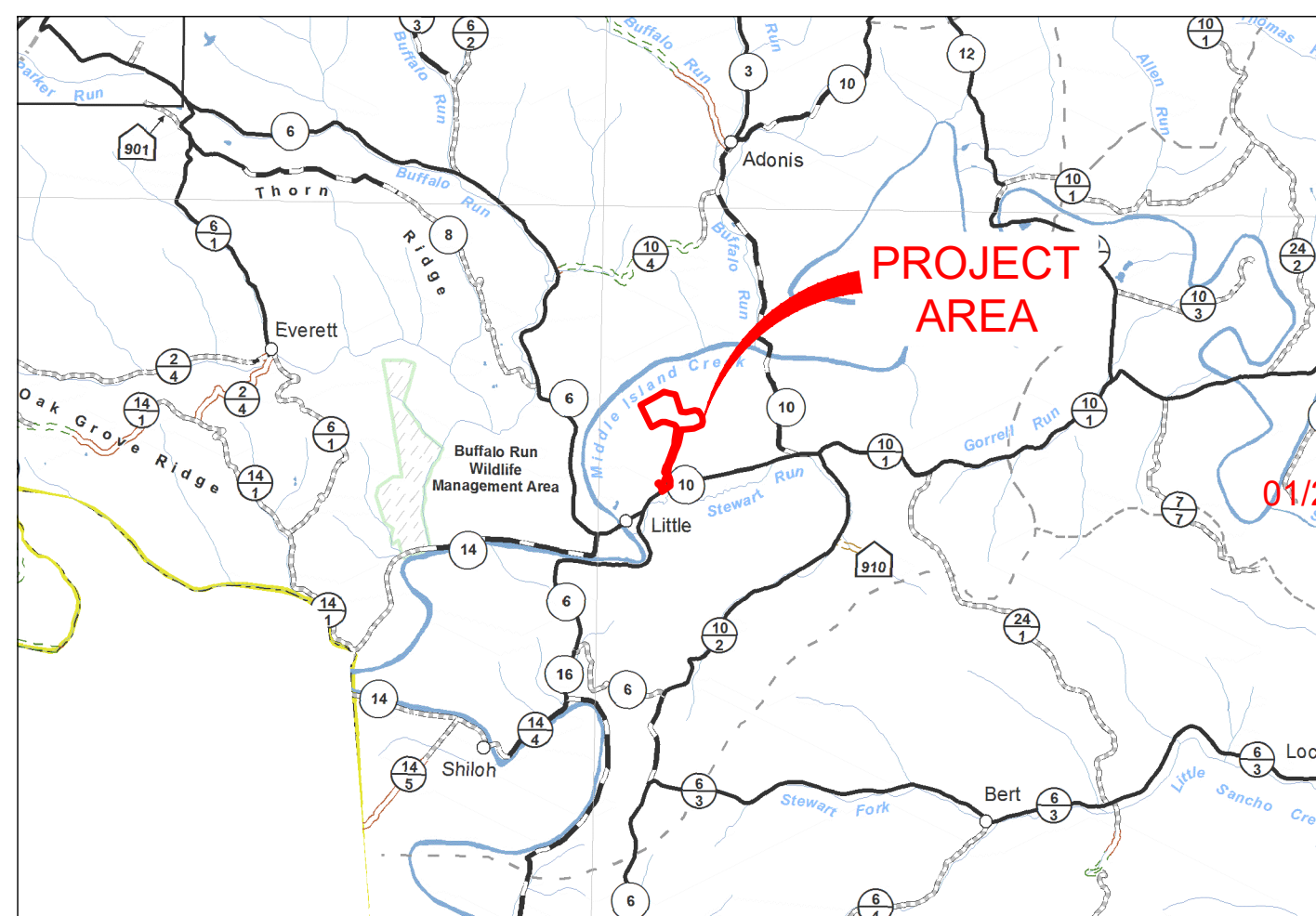
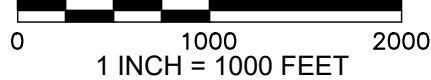
LAT./LONG: N 39.484022° W -80.993794°  
(APPROXIMATE CENTER OF PROJECT)



LOCATION MAP

MIDDLEBOURNE AND BENS RUN USGS 7.5' QUADS

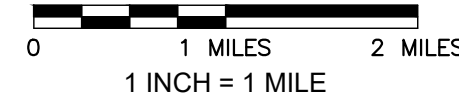
SCALE IN FEET



VICINITY MAP

TYLER COUNTY HIGHWAY MAP

SCALE IN FEET



LOCATION COORDINATES				
SITE LOCATIONS	NSRS11.WV-NF (NORTH ZONE)		UTM83-17M	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD ENTRANCE	39.477474	-80.993033	4369764.586	500599.168
CENTROID OF WELL PAD	39.484022	-80.993794	4370491.280	500533.667
CENTROID OF 22/26k AST	39.484106	-80.994904	4370500.547	500438.233

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

**FLOODPLAIN NOTES:**  
THE PROPOSED SITE LOCATION ENTRANCE IS WITHIN A FLOOD ZONE OF MIDDLE ISLAND CREEK AND STEWART RUN. PER FEMA MAP NUMBER(S) #54095C0150C.

**MISS UTILITY STATEMENT:**  
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TICKET #2220952732. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

**ENTRANCE PERMIT:**  
CIVIL AND ENVIRONMENTAL CONSULTANTS AND ANTERO RESOURCES WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

**ENVIRONMENTAL NOTES:**  
STREAM AND WETLAND DELINEATIONS WERE PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. (ON 4/26/23, 4/27/23, 5/1/23, AND 5/3/23). CIVIL & ENVIRONMENTAL CONSULTANTS, INC. PREPARED A STREAM AND WETLAND DELINEATION MAP WHICH VERIFIES 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 USAGE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFOREMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THE EXHIBIT PRIOR TO ENGAGING IN CONSTRUCTION ON THE PROPERTIES DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATER OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

**GEOTECHNICAL NOTES:**  
THE GEOTECHNICAL ANALYSIS WAS PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND SUMMARIZES THE FIELD TESTING AND EXPLORATION.

## PROJECT CONTACTS:

**OPERATOR:**  
ANTERO RESOURCES CORPORATION  
535 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE: (304) 842-4100  
FAX: (304) 842-4102

**ENGINEER/SURVEYOR:**  
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
JOSEPH D. ROBINSON, PE - PROJECT MANAGER/ENGINEER  
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**ENVIRONMENTAL:**  
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JACQULYN D. KESTER - PRINCIPAL  
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**GEOTECHNICAL:**  
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ROBERT WIRKS - DESIGN MANAGER  
OFFICE: (304) 842-4100 CELL: (304) 627-7405

SCOTT HOFFER - UTILITY SUPERVISOR  
CELL: (304) 615-8699

JIM WILSON - LAND AGENT  
CELL: 304-671-2708

JON MICEVERS - SVP OPERATIONS  
OFFICE: 303-357-6799

## SHEET INDEX

C000 COVER SHEET	C605 PROFILES AND SECTIONS	C805 DETAILS
C001 GENERAL NOTES	C606 PROFILES AND SECTIONS	C806 DETAILS
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C003 MATERIAL QUANTITIES	C608 PROFILES AND SECTIONS	C808 DETAILS
C004 MASTER LEGEND	C609 PROFILES AND SECTIONS	C900 OVERALL RECLAMATION PLAN
C100 EXISTING CONDITIONS	C610 PROFILES AND SECTIONS	C901 RECLAMATION PLAN
C300 OVERALL SITE PLAN	C611 PROFILES AND SECTIONS	C902 RECLAMATION PLAN
C301 SITE PLAN	C612 PROFILES AND SECTIONS	C903 RECLAMATION PLAN
C302 SITE PLAN	C613 PROFILES AND SECTIONS	
C303 SITE PLAN	C700 DRAINAGE PROFILES	
C800 PROFILES AND SECTIONS	C801 DETAILS	
C801 PROFILES AND SECTIONS	C802 DETAILS	
C802 PROFILES AND SECTIONS	C803 DETAILS	
C803 PROFILES AND SECTIONS	C804 DETAILS	
C604 PROFILES AND SECTIONS		

## RESTRICTIONS NOTES:

1. THERE ARE NO LAKES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD.
2. THERE ARE WETLANDS TO BE DISTURBED OR WITHIN 100' OF THE WELL PAD LOD.
3. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
4. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD AND LOD.
5. THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
6. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
7. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

GRADING VOLUMES			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
MAIN ACCESS ROAD	4,699	5,587	-888
WELL PAD	42,115	36,965	5,150
CAMPER ACCESS ROAD	586	2,107	-1,521
SPOIL-1 (MIXED PILE)	0	2,741	-2,741
<b>TOTAL</b>	<b>47,400</b>	<b>47,400</b>	<b>0</b>
TOPSOIL / STRIPPING WITH 20% SWELL ( 22,926 C.Y )		19,105 C.Y	
<b>TOTAL EXCAVATION</b>	<b>66,505</b>	<b>66,505</b>	<b>0</b>

## LIMITS OF DISTURBANCE PARCEL BREAK UPS - MARY PATTERSON WELL PAD

TYLER COUNTY, WEST VIRGINIA					
OWNER	TM-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACERAGE
KATHY SUE HERRON	9-7	351-545	5.47	PARCEL INFORMATION	
				MAIN ACCESS ROAD	1.13
				PARCEL TOTAL	1.13
TED A. AND DARLENE K. KOERBER	9-7.2	301-157	112.09	PARCEL INFORMATION	
				MAIN ACCESS ROAD	5.93
				WELL PAD	3.96
PARCEL TOTAL	9.89				
JIMMY E. EARL P, DENNIS, AND LINDA LOU PATTERSON	9-8	OR49-157	68.22	PARCEL INFORMATION	
				MAIN ACCESS ROAD	1.44
				CAMPER ACCESS ROAD	2.82
WELL PAD	13.09				
SPOIL PILE	4.12				
PARCEL TOTAL	21.47				
<b>TOTAL</b>				<b>TOTAL</b>	<b>32.49</b>

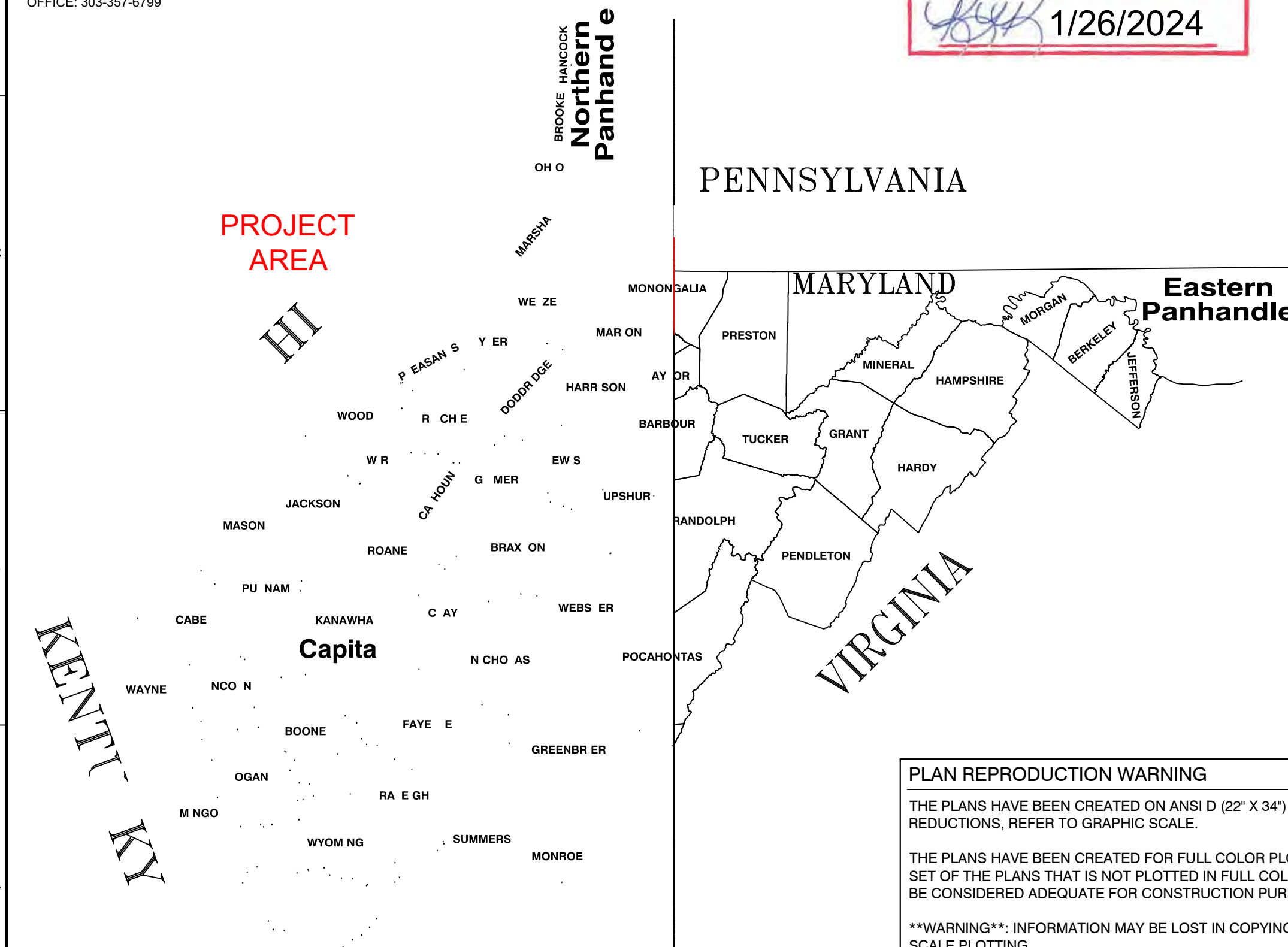
## L.O.D. AREAS

DESCRIPTION	ACRES
MAIN ACCESS ROAD	8.50
CAMPER ACCESS ROAD	2.82
WELL PAD	17.05
SPOIL PILE	4.12
<b>TOTAL</b>	<b>32.49</b>
WOODED	6.76

MARY PATTERSON WELL LEGEND							
WELL HEAD LETTER	WELL NAME	ELEVATION	WV NORTH NAD 27	WV NORTH NAD 83	NAD83 UTM-17M	NAD 83	NAD 27
Z	MARY PATTERSON 5V	694.18'	N: 362008.255 E: 1578261.013	N: 362042.148 E: 1546819.983	N: 4370530.096 E: 500507.337	39° 29' 30.74" -80° 59' 38.76"	39° 29' 03.46" -80° 59' 39.37"

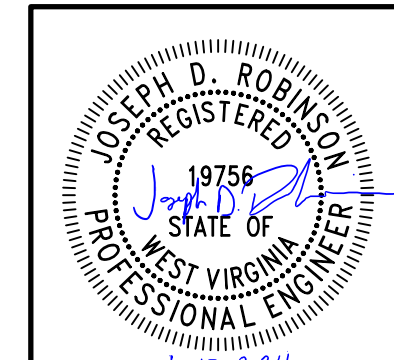
STREAM IMPACT TABLE								
STREAM	STREAM CLASS	OHWM		IMPACT	PERMANENT (LF)	TEMPORARY (LF)	PERMANENT IMPACT AREA	TOTAL LENGTH (LF)
		WIDTH	DEPTH					
CEC_STREAM_1	INTERMITTENT	2.25	0.5	ACCESS ROAD	51	25	0.003	76
CEC_STREAM_7	INTERMITTENT	1.00	0.33	ACCESS ROAD	24	22	0.001	46
CEC_STREAM_17_MOD	PERENNIAL	6.00	1	ACCESS ROAD	103	198	0.014	301
CEC_STREAM_18_MOD	PERENNIAL	3.00	0.5	ACCESS ROAD	119	21	0.008	140
<b>TOTALS</b>					<b>297</b>	<b>266</b>	<b>0.026</b>	<b>563</b>

WETLAND IMPACT TABLE				
WETLAND	IMPACT	PERMANENT (AC)	TEMPORARY (AC)	TOTAL AREA (AC)
CEC_WETLAND_A	ACCESS ROAD	0.029	0	0.029
CEC_WETLAND_B	ACCESS ROAD	0.003	0	0.003
CEC_WETLAND_C	ACCESS ROAD	0.003	0	0.003
CEC_WETLAND_E	ACCESS ROAD	0.043	0	0.043
CEC_WETLAND_K	ACCESS ROAD	0.039	0	0.039
<b>TOTALS</b>		<b>0.117</b>	<b>0</b>	<b>0.117</b>



**PLAN REPRODUCTION WARNING**  
THE PLANS HAVE BEEN CREATED ON ANSI D (22" X 34") SHEETS. 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 ADEQUATE FOR CONSTRUCTION PURPOSES.  
\*\*WARNING\*\* INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

**WEST VIRGINIA 811**  
CALL BEFORE YOU DIG!  
WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL TWO BUSINESS DAYS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW!



**REVISION RECORD**

NO.	DATE	DESCRIPTION
1	11-18-23	ADDED 222095C0150C

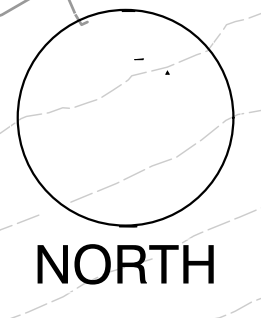
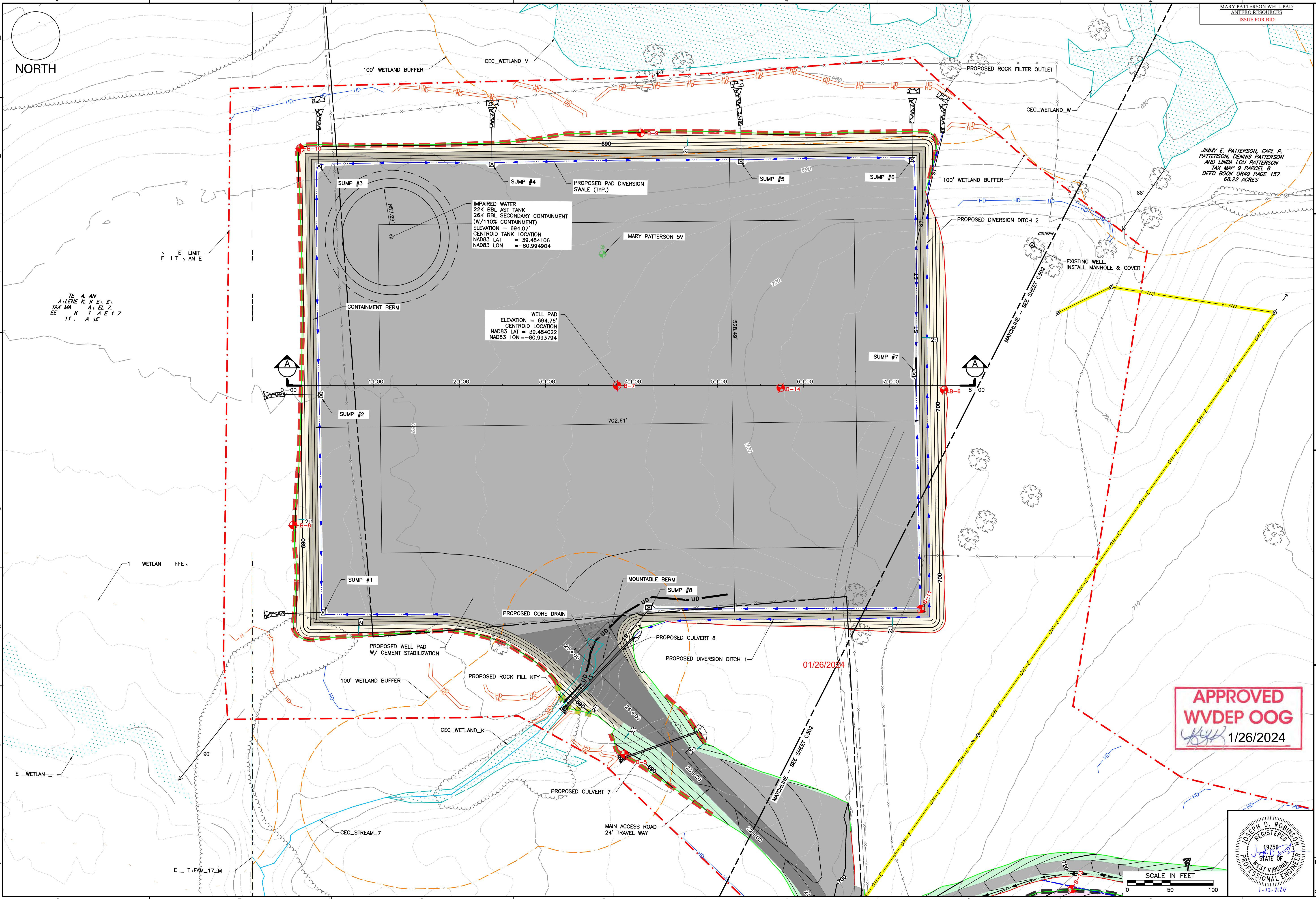
**Civil & Environmental Consultants, Inc.**  
120 Genesis Boulevard • Bridgeport, WV 26330  
Ph: 304.933.3119 • 855.488.9639 • Fax: 304.934.9332  
www.cecinc.com

**ANTERO RESOURCES MARY PATTERSON WELL PAD TYLER COUNTY WEST VIRGINIA**

**COVER SHEET**

DRAWING NO: **C000**  
SHEET 1 OF 38

DATE: JANUARY 2024 | DRAWN BY: [Signature] | CHECKED BY: [Signature] | DWG SCALE: [Scale] | PROJECT NO: 332-412 | APPROVED BY: JDR



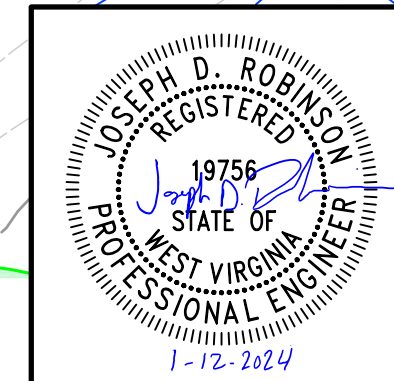
E LIMIT  
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**APPROVED**  
**WVDEP OOG**  
1/26/2024



SCALE IN FEET  
0 50 100

NO	DATE	DESCRIPTION
1	11/28/23	ISSUE FOR BID

**CEC**  
**Civil & Environmental Consultants, Inc.**  
120 Genesis Boulevard - Bridgeport, WV 26330  
Ph: 304.933.3119 - 855.488.9539 - Fax: 304.933.3327  
www.cecinc.com

**ANTERO RESOURCES**  
**MARY PATTERSON WELL PAD**  
**TYLER COUNTY**  
**WEST VIRGINIA**

**SITE PLAN**

DATE: JANUARY 2024  
DRAWN BY: DBS  
CHECKED BY: JDR  
PROJECT NO: 332-412  
APPROVED BY: JDR

DRAWING NO: **C303**  
SHEET 10 OF 38