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west virginia department of environmental protection

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

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

Monday, June 28, 2021  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
DENVER, CO 80202

Re: Permit approval for GATRELL UNIT 2H  
47-095-02740-00-00

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: GATRELL UNIT 2H  
Farm Name: JOHN SHEPHERD  
U.S. WELL NUMBER: 47-095-02740-00-00  
Horizontal 6A New Drill  
Date Issued: 6/28/2021

# PERMIT CONDITIONS

4709502740

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

## CONDITIONS

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

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# PERMIT CONDITIONS

4709502740

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

07/02/2021

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 McElroy Shirley 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Gatrell Unit 2H Well Pad Name: Shepherd Pad

3) Farm Name/Surface Owner: John Shepherd Public Road Access: Sandy Creek Rd.

4) Elevation, current ground: 935' Elevation, proposed post-construction: ~935'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow  Deep

Horizontal

*DMH  
6-8-21*

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 7100' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7100' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19100' MD

11) Proposed Horizontal Leg Length: 10202'

12) Approximate Fresh Water Strata Depths: 98'

13) Method to Determine Fresh Water Depths: 47-095-01482, 47-095-01434

14) Approximate Saltwater Depths: 1586'

15) Approximate Coal Seam Depths: None Identified

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

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

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

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18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	H-40	94#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300	300	CTS, 417 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	19100	19100	CTS, 4844 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

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6-2-21

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

**PACKERS**

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

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

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

\*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

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

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

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

*DMH  
6-21*

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.43 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.13 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A cement.

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

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

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

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

25) Proposed borehole conditioning procedures:

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.

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\*Note: Attach additional sheets as needed.

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Gatrell Unit 2H

47095016510000 \*

47095004430000 •

47017064010000 \*

47017064170000 \*

07/02/2021



Antero Resources Corporation

Gatrell Unit 2H - AOR



- WELL SYMBOLS
- Gas Well \*
- Oil Well •

June 22, 2021

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47095016510000	WILLIAMS HEIRS	1	ALLIANCE PET CO LLC	DAC CORP	2,400	2064 - 2149	Big Injun	Weir, Benson, Alexander
47095004430000	SAMUEL DUCKWORTH HR	1	ALLIANCE PET CO LLC	DILMAR OIL	2,012	1814 - 1850	Big Injun	Weir, Benson, Alexander
47017064010000	KNIGHT UNIT	1HST	ANTERO RESOURCES CORPORATION	ANTERO RESOURCES CORPORATION	17,363	7284 - 17267	Marcellus	
47017064170000	KNIGHT UNIT	2H	ANTERO RESOURCES CORPORATION	ANTERO RESOURCES CORPORATION	16,957	7189 - 16854	Marcellus	

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WW-9  
(4/16)

4709502740  
API Number 47 - 095 -  
Operator's Well No. Gatrell Unit 2H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494507062

Watershed (HUC 10) McElroy Creek Quadrangle Shirley 7.5'

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

Will a pit be used? Yes  No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

*Dan H  
6.8.21*

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

Surface - Air/Freshwater, Intermediate -  
Dust/Sluff Foam, Production - Water Based Mud or  
Synthetic Based Mud

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

Additives to be used in drilling medium? Please See Attachment

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

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

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

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

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

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

Company Official Signature Gretchen Kohler Office of Oil and Gas

Company Official (Typed Name) Gretchen Kohler JUN 09 2021

Company Official Title Sr. Environmental & Regulatory Manager

WV Department of  
Environmental Protection

Subscribed and sworn to before me this 24th day of May, 2021

*Chang*

3/13/2022

Notary Public  
MEGAN GRIFFITH  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID 20184011666  
MY COMMISSION EXPIRES MARCH 13, 2022

My commission expires

07/02/2021

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 26.43 acres Prevegetation pH \_\_\_\_\_

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

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

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road "A" (8.34 acres) + Access Road "B" (1.82 acres) - Staging Area (0.38) + Well Pad (8.13 acres) + Water Containment Pad (4.21 acres) + Excess/Topsoil Material Stockpiles (3.55 acres) = 26.43 Acres

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Annual Ryegrass	40
Field Bromegrass	40

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

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

See attached Table IV-4A for additional seed type (Shepherd Pad Design)

\*or type of grass seed requested by surface owner

\*or type of grass seed requested by surface owner

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Oil & Gas Prospects Date: 6-8-21

Field Reviewed?  Yes  No

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

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

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

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

**PRODUCTION INTERVAL**

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

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

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**911 Address**  
**120 Sandys Run Rd**  
**Shirley, WV 26434**

## **Well Site Safety Plan**

### **Antero Resources**

**Well Name: Gatrell Unit 1H-3H & Rapids Unit 1H-2H**

**Pad Location: SHEPHERD PAD**  
Tyler County/McElroy District

**GPS Coordinates:**

**Entrance** - Lat 39°23'29.3"/Long -80°45'55.9" (NAD83)  
**Pad Center** - Lat 39°23'37.2"/Long -80°45'39.9" (NAD83)

**Driving Directions:**

From Post Office in Shirley: Travel West on WV-23 W towards Co Rd 6/2. Turn left onto Rd 6/2 for 0.1 miles. Slight right to stay on Co Rd 6/2 for 0.5 miles. Turn left for 0.2 miles. Lease road will be on your left.

**Alternate Route:**

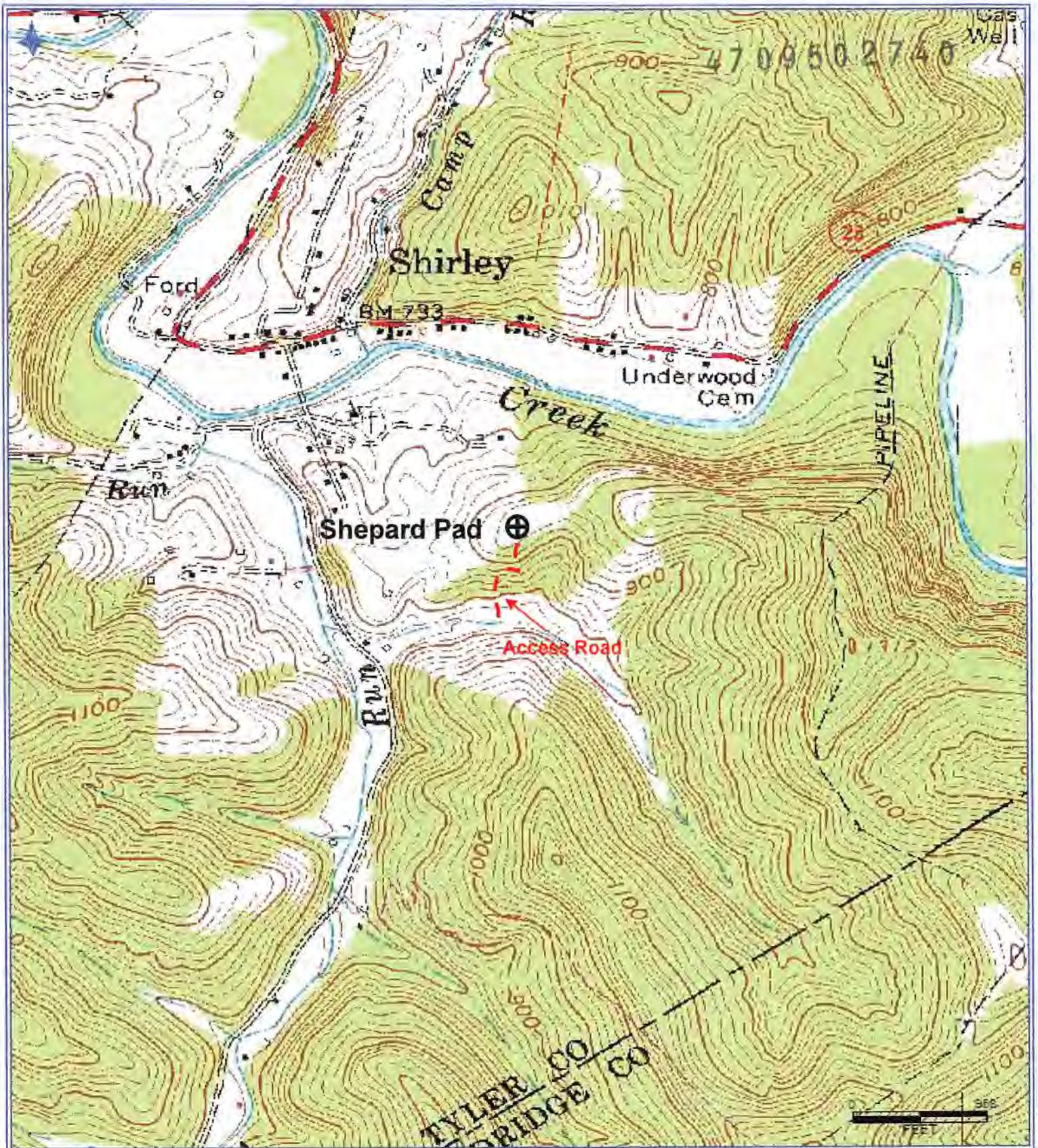
From the intersection of McElroy Creek Road and Big Flint Rd: Head west on WV-23 W toward Braden Hill for 2.3 miles. Turn left onto Rd 6/2 for 0.1 miles. Slight right to stay on Co Rd 6/2 for 0.5 miles. Turn left for 0.2 miles. Lease road will be on your left.

**EMERGENCY (24 HOUR) CONTACT 1-800-878-137**

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*6-8-21*



**Antero Resources Corporation**  
 Appalachian Basin  
**SHEPHERD PAD**  
 Tyler County

Quadrangle: Shirley  
 Watershed: McElroy Creek  
 District: McElroy  
 Date: 5-19-2021

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MAY 25 2021

WV Department of Environmental Protection **07/02/2021**

LATITUDE 39°25'00" 3,199'

LATITUDE 39°27'30" 5,924'

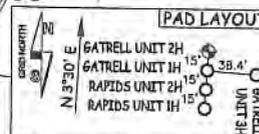
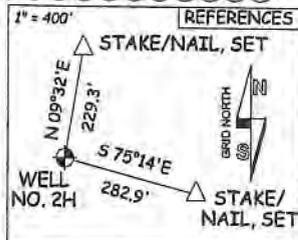
8,412'

13,721'

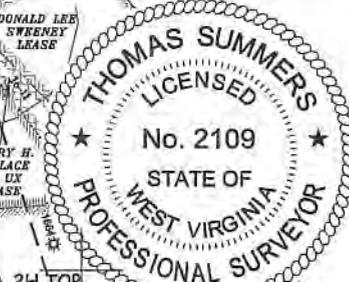
LONGITUDE 80°45'00"

LONGITUDE 80°45'00"

Antero Resources Corporation  
Well No. Gatrell Unit 2H



NOTES:  
WELL 2H TOP HOLE INFORMATION:  
N: 327,959ft E: 1,643,539ft  
LAT: 39°23'36.86" LON: 80°45'40.75"  
BOTTOM HOLE INFORMATION:  
N: 337,864ft E: 1,640,953ft  
LAT: 39°25'14.39" LON: 80°46'15.48"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.  
(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 2H TOP HOLE INFORMATION:  
N: 4,360,489m E: 520,568m  
BOTTOM HOLE INFORMATION:  
N: 4,363,494m E: 519,729m



WV NORTH ZONE  
GRID NORTH

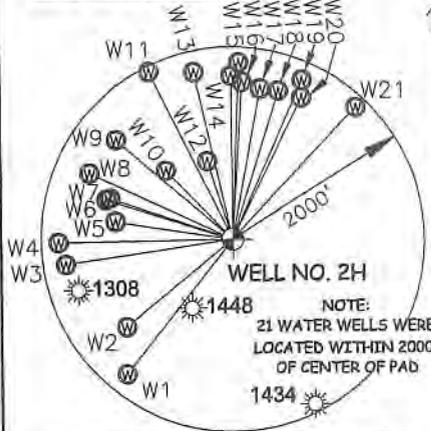
Table listing well numbers and owners:

16-3	KES Investments 2 LLC
16-4	KES Investments 2 LLC
16-8	June Griffin
16-9	Jamie Straight
16-10	Mike Ross Inc.
16-11	Charles Straight
16-14	John Merritt
16-15	Ken Der Jr.
16-19.1	Ken Der Jr.
16-16	Harry Yanny
19-15	Sharon George
19-16	Teresa Weekley
19-16.1	Teresa Weekley
19-16.2	Clifton Weekley
19-16.3	Clarissa Seese
19-16.4	Perry Weekley
19-17	Darren Seese
19-27	Sandra Hopper
19-28	William Forbes
19-29	John Shepherd
19-30	John Shepherd
19-55	Heith Howell
19-58	Robert Gilie
19A-16	Arthur Kester

Table with columns: LINE, BEARING, DIST.

LINE	BEARING	DIST.
W1	S 38°38' W	1767.8'
W2	S 50°59' W	1435.2'
W3	S 01°39' W	1764.3'
W4	S 89°00' W	1819.7'
W5	N 81°26' W	1237.3'
W6	N 72°47' W	1377.6'
W7	N 71°34' W	1346.1'
W8	N 65°17' W	1640.8'
W9	N 49°29' W	1592.4'
W10	N 43°57' W	993.0'
W11	N 26°12' W	1944.0'
W12	N 17°41' W	851.8'
W13	N 12°49' W	1781.2'
W14	N 00°13' W	1701.9'
W15	N 02°18' E	1838.5'
W16	N 03°44' E	1639.4'
W17	N 10°47' E	1592.5'
W18	N 17°35' E	1618.9'
W19	N 24°01' E	1806.6'
W20	N 26°22' E	1642.9'
W21	N 43°22' E	1882.5'

NOTE:  
NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.  
(NAD) 27 (UTM) ZONE 17 COORDS:  
WELL 2H TOP HOLE INFORMATION:  
N: 14,305,324ft E: 1,707,849ft  
POINT OF ENTRY INFORMATION:  
N: 14,305,488ft E: 1,708,270ft  
BOTTOM HOLE INFORMATION:  
N: 14,315,181ft E: 1,705,098ft



JOB # 18-003WA  
DRAWING # GATRELL2H  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS  
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS



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

LEGEND  
--- Surface Owner Boundary Lines +/-  
--- Interior Surface Tracts +/-  
--- Existing Fence  
--- Found monument, as noted  
THOMAS SUMMERS P.S. 2109  
DATE 05/17/21  
OPERATOR'S WELL # GATRELL UNIT #2H

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 02740  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT  
LOCATION: ELEVATION 935' - ASBUILT WATERSHED McELROY CREEK  
QUADRANGLE SHIRLEY 7.5 DISTRICT McELROY COUNTY TYLER 07/02/2021  
SURFACE OWNER JOHN SHEPHERD ACREAGE 31.75 ACRES +/-  
OIL & GAS ROYALTY OWNER LAMOYNE SWEENEY; EDGAR B. HARTLEY, HEIR OF HEATHER HARTLEY; LEASE ACREAGE 72.28 AC±; 29 AC±;  
JOHN B. SHEPHERD ET UX; RANDI MICHAEL; CLARISSA REED; GLEN DUCKWORTH; ADELIN WRIGHT ET AL; 18 AC±; 320.94 AC±; 6.27 AC±; 29.92 AC±; 28 AC±;  
PERRY W. DUCKWORTH; REBECCA L. WILLIAMS; RICHARD GATRELL ET UX; ROSEMARY HAUGHT 86.25 AC±; 210 AC±; 100 AC±; 98.5AC±  
PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X  
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL  
(SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,100' TVD 19,100' MD  
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD  
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

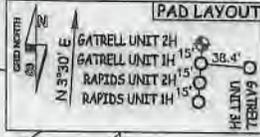
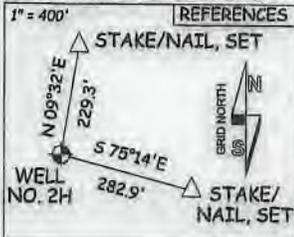
COUNTY NAME PERMIT

LATITUDE 39°25'00" 3,199'

LATITUDE 39°27'30" 5,924'

8,412' LONGITUDE 80°45'00"

Antero Resources Corporation Well No. Gatrell Unit 2H



NOTES: WELL 2H TOP HOLE INFORMATION: N: 327,959ft E: 1,643,539ft LAT: 39°23'36.86" LON: 80°45'40.75" BOTTOM HOLE INFORMATION: N: 337,864ft E: 1,640,953ft LAT: 39°25'14.39" LON: 80°46'15.48" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 4,360,489m E: 520,568m BOTTOM HOLE INFORMATION: N: 4,363,494m E: 519,729m

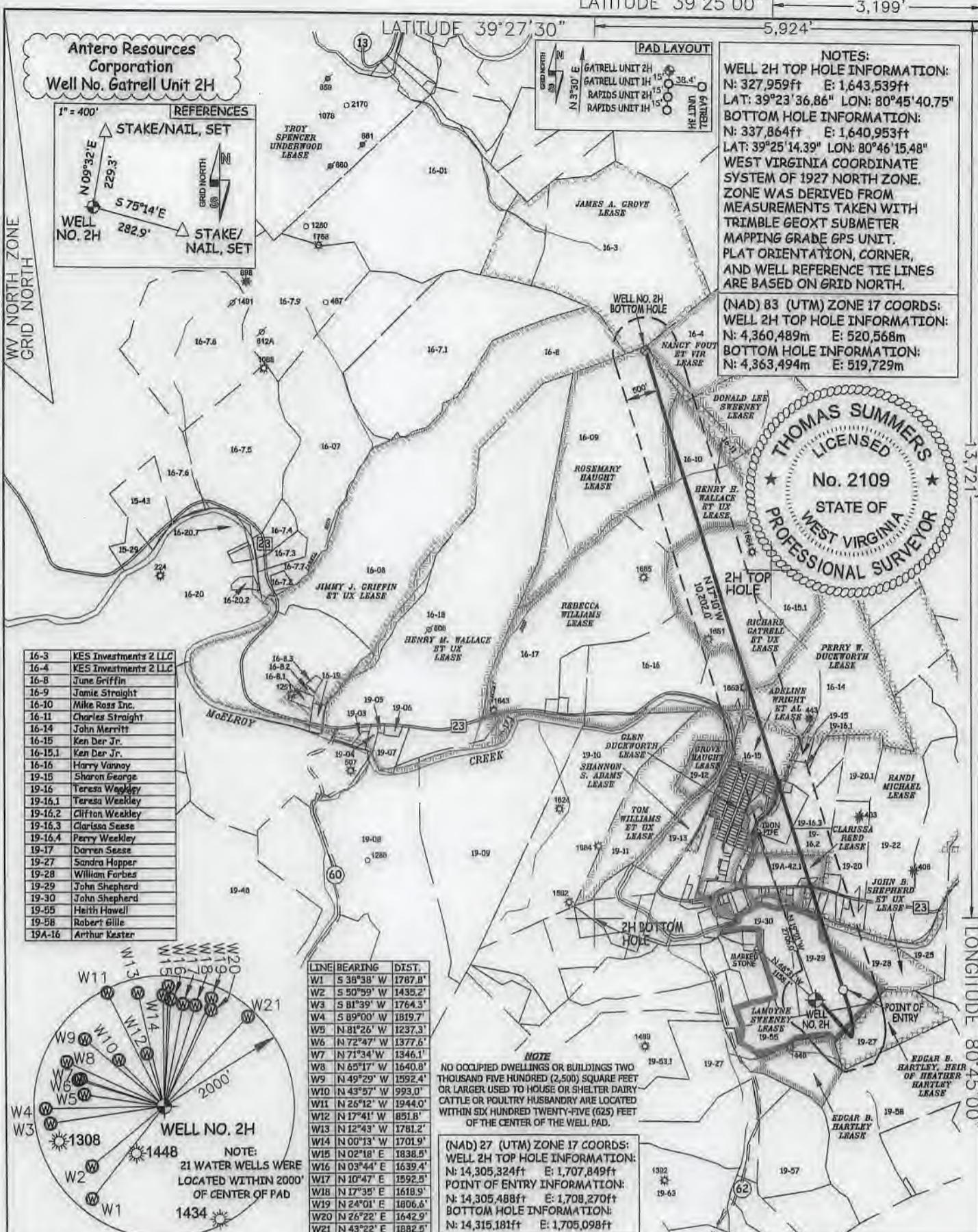
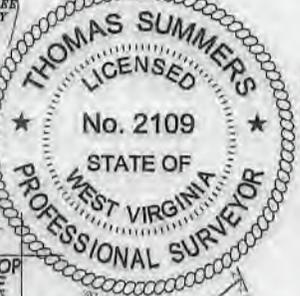
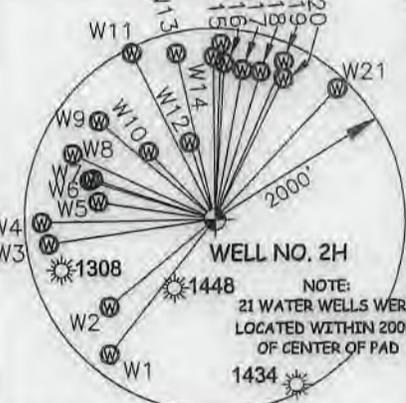


Table listing lease owners and well numbers (e.g., 16-3 KES Investments 2 LLC, 16-4 KES Investments 2 LLC, etc.)

Table with columns: LINE, BEARING, DIST. (e.g., W1 S 38°38' W 1787.8')

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



JOB # 18-003WA DRAWING # GATRELL2H SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

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



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

LEGEND: Surface Owner Boundary Lines +/- Interior Surface Tracts +/- Existing Fence Found monument, as noted

THOMAS SUMMERS P.S. 2109 DATE 05/17/21 OPERATOR'S WELL # GATRELL UNIT #2H

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 -02740 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 935' - ASBUILT WATERSHED McELROY COUNTY TYLER QUADRANGLE SHIRLEY 7.5' DISTRICT McELROY COUNTY TYLER SURFACE OWNER JOHN SHEPHERD ACREAGE 31.75 ACRES +/- OIL & GAS ROYALTY OWNER LAMOYNE SWEENEY; EDGAR B. HARTLEY, HEIR OF HEATHER HARTLEY; LEASE ACREAGE 72.28 AC±; 29 AC±; JOHN B. SHEPHERD ET UX; RANDI MICHAEL; CLARISSA REED; GLEN DUCKWORTH; ADELIN WRIGHT ET AL; 18 AC±; 320.94 AC±; 6.27 AC±; 29.92 AC±; 28 AC±; PERRY W. DUCKWORTH; REBECCA L. WILLIAMS; RICHARD GATRELL ET UX; ROSEMARY HAUGHT 86.25 AC±; 210 AC±; 100 AC±; 98.5AC± PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,100' TVD 19,100' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DJANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

07/02/2021

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>Lamoyne Sweeney Lease</u></b>			
Lamoyne Sweeney	Four Leaf Land Company	1/8	0370/0617
Four Leaf Land Company	Antero Resources Appalachian Corporation	Assignment	0403/0566
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0557/0430
<b><u>Edgar B. Hartley, Heir of Heather Hartley Lease</u></b>			
Edgar B. Hartley, Heir of Heather Hartley	Antero Resources Corporation	1/8+	0498/0326
<b><u>Lamoyne Sweeney Lease</u></b>			
Lamoyne Sweeney	Four Leaf Land Company	1/8	0370/0617
Four Leaf Land Company	Antero Resources Appalachian Corporation	Assignment	0403/0566
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0557/0430
<b><u>John B. Shepherd et ux Lease</u></b>			
John B. Shepherd et ux	Antero Resources Corporation	1/8+	0437/0327
<b><u>Clarissa Reed Lease</u></b>			
Clarissa Reed	Antero Resources Corporation	1/8+	0611/0614
<b><u>Randi Michael Lease</u></b>			
Randi Michael	Antero Resources Corporation	1/8+	0474/0777
<b><u>Adeline Wright et ux Lease</u></b>			
Adeline Wright et ux	Drilling Appalachian Corporation	1/8	0316/0160
Drilling Appalachian Corporation	Antero Resources Corporation	1/8+	0391/0416
<b><u>Perry W Duckworth Lease</u></b>			
Perry D Duckworth	Antero Resources Corporation	1/8	481/652
<b><u>Rebecca Williams Lease</u></b>			
Rebecca Williams	Drilling Appalachian Corporation	1/8	0311/0344
Drilling Appalachian Corporation	Antero Resources Corporation	Assignment	0557/0430
<b><u>Richard Gatrell et ux Lease</u></b>			
Richard Gatrell et ux	Drilling Appalachian Corporation	1/8	0316/0160
Drilling Appalachian Corporation	Antero Resources Corporation	1/8+	0391/0416
<b><u>Henry H. Wallace et ux Lease</u></b>			
Henry H. Wallace et ux	Equitrans LP	1/8	0283/0338
Equitrans LP	EQT Production Company	Agreement	0396/0640
EQT Production Company	Antero Resources Corporation	Assignment	0663/0001

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

07/02/2021

\*\*CONTINUED ON NEXT PAGE\*\*

WW-6A1  
(5/13)

Operator's Well No. Gatrell Unit 2H

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

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>Rosemary Haught Lease</u>	Rosemary Haught	Antero Resources Corporation	1/8+	0627/0409

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

RECEIVED  
Office of Oil and Gas

MAY 25 2021

WV Department of  
Environmental Protection

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

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

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

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

Well Operator: Antero Resources Corporation

By: Tim Rady

Its: VP of Land

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

4709502740



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

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: Gatrell Unit 2H  
Quadrangle: Shirley 7.5'  
Tyler County/McElroy District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Gatrell Unit 2H 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 Gatrell Unit 2H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

*Tyler Adams*

Tyler Adams  
Landman

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Office of Oil and Gas

JUN 23 2021

WV Department of  
Environmental Protection

07/02/2021

4709502740

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

Date of Notice Certification: 05/23/2021

API No. 47- 095 -  
Operator's Well No. Gatrell Unit 2H  
Well Pad Name: Shepherd 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>520568m</u>
County:	<u>Tyler</u>		Northing:	<u>4360489m</u>
District:	<u>McElroy</u>	Public Road Access:	<u>Sandy Creek Rd.</u>	
Quadrangle:	<u>Shirley 7.5'</u>	Generally used farm name:	<u>John Shepherd</u>	
Watershed:	<u>McElroy 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  <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED  <input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED  <input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)  <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION  <input checked="" type="checkbox"/> 5. PUBLIC NOTICE  <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<b>OOG OFFICE USE ONLY</b>  <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED   <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED
RECEIVED Office of Oil and Gas  MAY 25 2021  WV Department of Environmental Protection		

**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.

07/02/2021

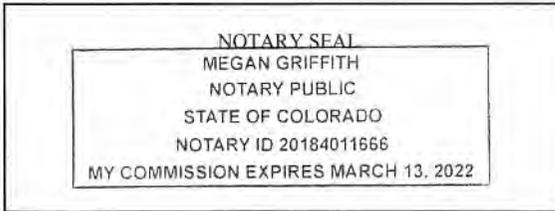
4709502740

**Certification of Notice is hereby given:**

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

Well Operator: Antero Resources Corporation  
By: Maria Henry *Maria J. Henry*  
Its: VP of Geology  
Telephone: 303-357-7310

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



Subscribed and sworn before me this 24<sup>th</sup> day of May 2021  
*Megan Griffith* Notary Public  
My Commission Expires 3/13/2022

**Oil and Gas Privacy Notice:**

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

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Office of Oil and Gas  
MAY 25 2021  
WV Department of  
Environmental Protection

WW-6A  
(9-13)

4709502740  
API NO. 47-095 -  
OPERATOR WELL NO. Gatrell Unit 2H  
Well Pad Name: Shepherd Pad

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:** 5/24/2021 **Date Permit Application Filed:** 5/24/2021

**Notice of:**

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

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

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

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. 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: John B. Shepherd  
Address: 102 Sandys Run Road  
West Union, WV 26456

Name: Heith Michael Howell  
Address: 686 Doolin Run Road  
New Martinsville, WV 26155

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

Name: John B. Shepherd  
Address: 102 Sandys Run Road  
West Union, WV 26456

Name: Heith Michael Howell  
Address: 686 Doolin Run Road  
New Martinsville, WV 26155

SURFACE OWNER(s) (Impoundments or Pits)

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

COAL OWNER OR LESSEE

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

COAL OPERATOR

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

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

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

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

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

\*Please attach additional forms if necessary

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Office of Oil and Gas

MAY 25 2021

WV Department of  
Environmental Protection

07/02/2021

WW-6A  
(8-13)

RECEIVED  
Office of Oil and Gas

MAY 25 2021

4709502740  
API NO. 47-095  
OPERATOR WELL NO. Gatrell Unit 2H  
Well Pad Name: Shepherd Pad

**Notice is hereby given:**

WV Department of  
Environmental Protection

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

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WW-6A  
(8-13)

API NO. 47-095 -  
OPERATOR WELL NO. Gatrell Unit 2H  
Well Pad Name: Shepherd Pad

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

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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.**

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(8-13)

4709502740  
API NO. 47-095  
OPERATOR WELL NO. Gatrell Unit 2H  
Well Pad Name: Shepherd Pad

**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.

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WV Department of  
Environmental Protection

07/02/2021

WW-6A  
(8-13)

4709502740  
API NO. 47-095 -  
OPERATOR WELL NO. Gatrell Unit 2H  
Well Pad Name: Shepherd Pad

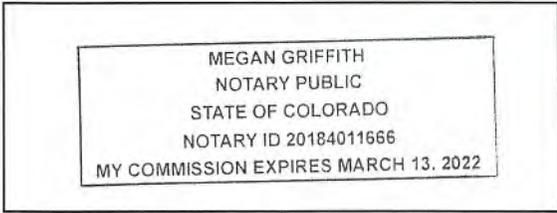
**Notice is hereby given by:**

Well Operator: Antero Resources Corporation *Maria J. Henry*  
Telephone: (303) 357-7223  
Email: mgriffith@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 24<sup>th</sup> day of May, 2021  
*[Signature]* Notary Public  
My Commission Expires 3/13/2022

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**WW-6A Notice of Application Attachment (SHEPHERD PAD):****List of Surface Owner(s) with Proposed Disturbance associated with Shepherd Well Pad:****WELL PAD – These owners were notified of all well work permit applications, and have executed signed Surface Use Agreements with Antero Resources Corporation.****TM 19 PCL 29**

**Owner:** John B. Shepherd &  
Tammy L. Shepherd  
**Address:** 102 Sandys Run Road  
West Union, WV 26456

**TM 19 PCL 29**

**Owner:** Heith Michael Howell  
**Address:** 686 Doolin Run Road  
New Martinsville, WV 26155

**ROAD AND/OR OTHER DISTURBANCE - All owners have executed signed Surface Use and/or Road Agreements with Antero Resources Corporation. However, they were only notified if their tracts were overlying the oil and gas leasehold being developed by the proposed well work.**

**TM 19 PCL 29**

**Owner:** John B. Shepherd &  
Tammy L. Shepherd  
**Address:** 102 Sandys Run Road  
West Union, WV 26456

**TM 19 PCL 27 (continued...)**

**Owner:** Sandra Hopper ✓  
**Address:** 564 Sandys Run Road  
West Union, WV 26456

**TM 19 PCL 55**

**Owner:** Heith Michael Howell  
**Address:** 686 Doolin Run Road  
New Martinsville, WV 26155

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**WW-6A Notice of Application Attachment (SHEPHERD PAD):**

4709502740

**WATER SOURCE OWNERS – Within 1500'**

\*NOTE: On attached water well map 15 other water sources are identified, but they are located greater than 1500' from the subject well pad location.

1 Water Source: W2 – 1435'

**Owner:** Heith Howell  
**Address:** 686 Doolin Run Road  
New Martinsville, WV 26155

3 Water Sources: W5 – 1237', W6 – 1378', W7 – 1346'

**Owner:** Gary Wright ✓  
**Address:** P.O. Box 347  
Middlebourne, WV 26149

2 Water Sources: W10 – 993', W12 – 852'

**Owner:** John Shepherd ✓  
**Address:** 102 Sandys Run Road  
West Union, WV 26456

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4709502740

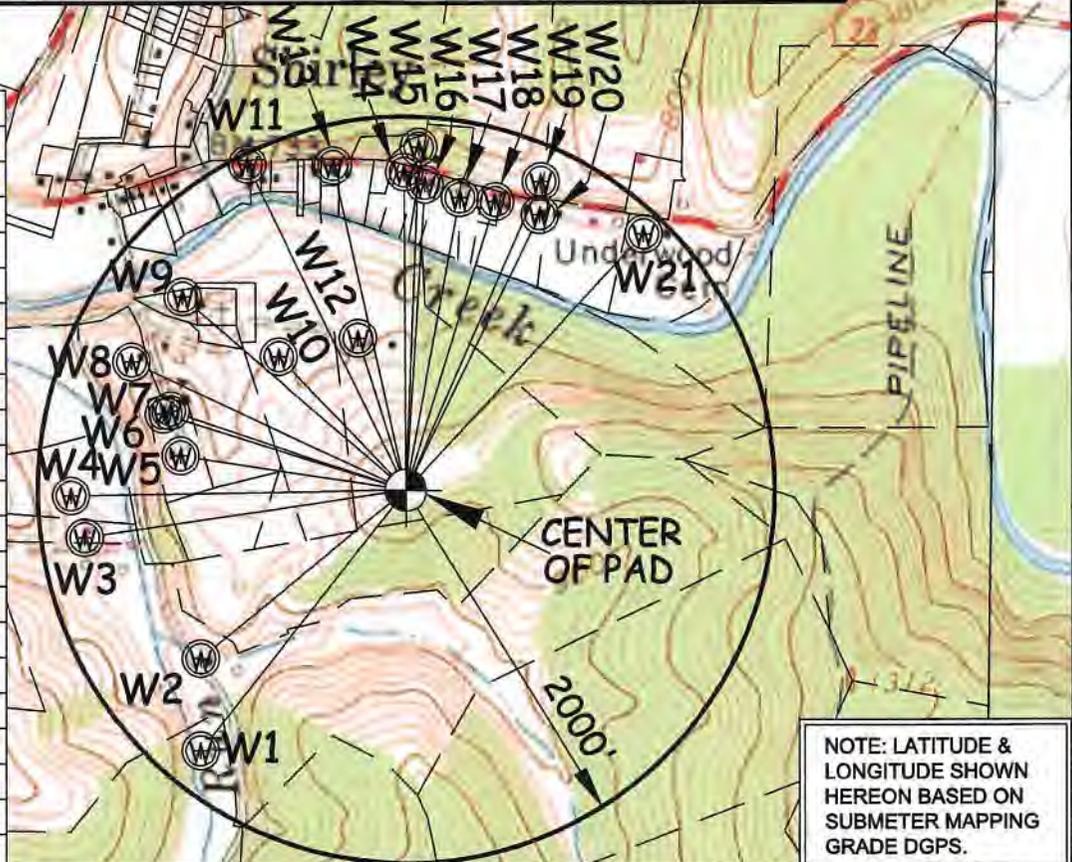
FORM WW-9

# SHEPHERD PAD ANTERO RESOURCES CORPORATION

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PAGE OF

LINE	BEARING	DIST.
W1	S 38°38' W	1787.8'
W2	S 50°59' W	1435.2'
W3	S 81°39' W	1764.3'
W4	S 89°00' W	1819.7'
W5	N 81°26' W	1237.3'
W6	N 72°47' W	1377.6'
W7	N 71°34' W	1346.1'
W8	N 65°17' W	1640.8'
W9	N 49°29' W	1592.4'
W10	N 43°57' W	993.0'
W11	N 26°12' W	1944.0'
W12	N 17°41' W	851.8'
W13	N 12°43' W	1781.2'
W14	N 00°13' W	1701.9'
W15	N 02°18' E	1838.5'
W16	N 03°44' E	1639.4'
W17	N 10°47' E	1592.5'
W18	N 17°35' E	1618.9'
W19	N 24°01' E	1806.6'
W20	N 26°22' E	1642.9'
W21	N 43°22' E	1882.5'



NOTE: LATITUDE & LONGITUDE SHOWN HEREON BASED ON SUBMETER MAPPING GRADE DGPS.

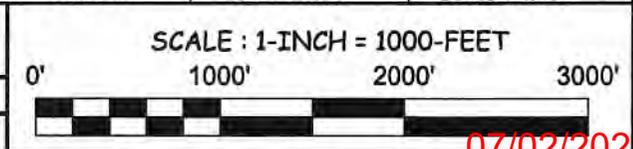
WELL	SURFACE OWNER	ADDRESS	DIST-TAX MAP-PAR	WELL LATITUDE	WELL LONGITUDE
W1	WILLIAM BALL	1220 ELMHURST DR., WEIRTON , WV 26062	5-19-57	39°23'22.63"	80°45'54.38"
W2	HEITH HOWELL	686 Doolin Run Road, New Martinsville, WV 26155	5-19-55	39°23'27.51"	80°45'54.46"
W3	LARRY MARABLE	4605 HOLMEHURST WAT, BOWIE, MD 20720	5-19-53.1	39°23'33.82"	80°46'02.61"
W4	VIOLET JEFFERS	P.O. BOX 1, SHIRLEY , WV 26434	5-19-53	39°23'36.02"	80°46'03.59"
W5	GARY WRIGHT	P.O. BOX 347, MIDDLEBOURNE, WV 26149	5-19-32.1	39°23'38.24"	80°45'56.04"
W6	GARY WRIGHT	P.O. BOX 347, MIDDLEBOURNE, WV 26149	5-19-33	39°23'40.44"	80°45'57.25"
W7	GARY WRIGHT	P.O. BOX 347, MIDDLEBOURNE, WV 26149	5-19-33	39°23'40.62"	80°45'56.76"
W8	ELLSWORTH CORK JR.	52 OLD SCHOOLHOUSE RD, SHIRLEY , WV 26434	5-19-38	39°23'43.17"	80°45'59.53"
W9	SHIRLEY E.U.B. CHURCH		5-19-37	39°23'46.65"	80°45'56.02"
W10	JOHN SHEPHERD	102 SANDYS RUN RD, WEST UNION , WV 26456	5-19-30	39°23'43.56"	80°45'49.32"
W11	JAMES FELTON	P.O. BOX 142, SHIRLEY , WV 26434	5-19A-51	39°23'53.71"	80°45'51.67"
W12	JOHN SHEPHERD	102 SANDYS RUN RD, WEST UNION , WV 26456	5-19-29	39°23'44.58"	80°45'43.86"
W13	GREGORY SHEPHERD	P.O. BOX 4, SHIRLEY , WV 26434	5-19A-47.1	39°23'53.71"	80°45'45.72"
W14	MICHAEL DAVIS	6630 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-18.1	39°23'53.41"	80°45'40.80"
W15	DEAN GARRISON	P.O. BOX 163, SHIRLEY , WV 26434	5-19A-43	39°23'54.76"	80°45'39.81"
W16		6630 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-19.2	39°23'52.78"	80°45'39.35"
W17	ANITA DOLL	6660 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-19	39°23'52.10"	80°45'36.90"
W18	HOWARD STUBBS	6693 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-21	39°23'51.91"	80°45'34.47"
W19	HOWARD STUBBS	6693 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-20	39°23'53.00"	80°45'31.35"
W20	HOWARD STUBBS	6693 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-20	39°23'51.24"	80°45'31.39"
W21	DOUGLAS ENEIX	6756 MCELROY CREEK RD, WEST UNION , WV 26456	5-19-22	39°23'50.30"	80°45'24.20"

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

TOPO SECTION(S) OF :  
 SHIRLEY 7.5'

JOB #: 18-003WA

FILE: SHEPHERD PAD WW.DWG



DATE: 04/13/18

DRAWN BY: T.B.S.

07/02/2021

WW-6A4  
(1/12)

Operator Well No. Gatrell Unit 2H  
Multiple Wells on Shepherd Pad

4709502740

**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:** 03/10/2021      **Date Permit Application Filed:** 05/24/2021

**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: John B. Shepherd and Tammy L. Shepherd  
Address: 102 Sandys Run Rd.  
West Union, WV 26456

Name: Heith Michael Howell  
Address: 686 Doolin Run Rd.  
New Martinsville, WV 26155

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WV Department of  
Environmental Protection

**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: West Virginia      UTM NAD 83      Easting: 520568m  
County: Tyler      Northing: 4360489m  
District: McElroy      Public Road Access: Sandy Creek Rd.  
Quadrangle: Shirley 7.5'      Generally used farm name: John B. Shepherd and Tammy L. Shepherd  
Watershed: McElroy Creek

**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: 303-357-7233  
Email: mgriffith@anteroresources.com  
Facsimile: 303-357-7315

Authorized Representative: Megan Griffith  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephone: 303-357-7233  
Email: mgriffith@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).

4709502740

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:** 05/24/2021      **Date Permit Application Filed:** 05/24/2021

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

- CERTIFIED MAIL                                       HAND
- RETURN RECEIPT REQUESTED                                      DELIVERY

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

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

Name: John B. Shepherd  
Address: 102 Sandys Run Road  
West Union, WV 26456

Name: Heith Michael Howell  
Address: 686 Doolin Run Road  
New Martinsville, WV 26155

**Notice is hereby given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>520568m</u>
County:	<u>Tyler</u>		Northing:	<u>4360489m</u>
District:	<u>McElroy</u>	Public Road Access:	<u>Sandy Creek Rd.</u>	
Quadrangle:	<u>Shirley 7.5'</u>	Generally used farm name:	<u>John Shepherd</u>	
Watershed:	<u>McElroy Creek</u>			

**This Notice Shall Include:**

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

Well Operator: Antero Resources Corporation  
Telephone: (303) 357-7223  
Email: mgriffith@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

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

RECEIVED  
Office of Oil and Gas

MAY 25 2021

WV Department of  
Environmental Protection

07/02/2021



4709502740

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

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

**Byrd E. White, III**  
Secretary of Transportation/  
Commissioner of Highways

**Jimmy Wriston, P. E.**  
Deputy Secretary/  
Deputy Commissioner

May 24, 2021

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 Shepherd Pad, Tyler County  
Gatrell Unit 2H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2018-0098 which has been issued to Antero Resources for access to the State Road for a well site located off Tyler County Route 62 SLS MP 3.66.

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

Very Truly Yours,

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

Cc: Megan Griffith  
Antero Resources  
CH, OM, D-6  
File

# List of Anticipated Additives Used for Fracturing or Stimulating Well 4709502740

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

MAY 25 2021

WA Department of  
Environmental Protection

07/02/2021

4709502740

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

McELROY DISTRICT, TYLER COUNTY, WEST VIRGINIA  
OUTLET McELROY CREEK WATERSHED

USGS 7.5 SHIRLEY & CENTER POINT QUAD MAP



WEST VIRGINIA STATE PLANE COORDINATE SYSTEM  
ELEVATION BASED ON NAVD83  
ESTABLISHED BY SURVEY GROUP GPR & OPRC  
POST-PROCESSING

**LOCATION COORDINATES:**

ACCESS ROAD "A" ENTRANCE  
LATITUDE: 39.39144 LONGITUDE: -80.76510 (NAD 83)  
LATITUDE: 39.39172 LONGITUDE: -80.76584 (NAD 27)  
N 4380244.39 E 520192.56 (UTM ZONE 17 METERS)

TEMPORARY ACCESS ROAD "B" ENTRANCE  
LATITUDE: 39.39629 LONGITUDE: -80.76935 (NAD 83)  
LATITUDE: 39.39647 LONGITUDE: -80.76939 (NAD 27)  
N 4390774.05 E 520120.15 (UTM ZONE 17 METERS)

CENTER OF TANK  
LATITUDE: 39.39286 LONGITUDE: -80.76444 (NAD 83)  
LATITUDE: 39.39276 LONGITUDE: -80.76418 (NAD 27)  
N 4380599.58 E 520293.06 (UTM ZONE 17 METERS)

CENTROID OF PAD  
LATITUDE: 39.39387 LONGITUDE: -80.76107 (NAD 83)  
LATITUDE: 39.39356 LONGITUDE: -80.76125 (NAD 27)  
N 4380488.74 E 520373.83 (UTM ZONE 17 METERS)

**GENERAL DESCRIPTION:**

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

**FLOODPLAIN NOTES:**

THE PROPOSED SITE IS LOCATED IN FLOOD ZONE "X" PER FEMA MAP NUMBER 454080C0170C. THE EXISTING TEMPORARY ACCESS ROAD IS LOCATED IN FLOOD ZONE "A" PER FEMA MAP NUMBER 454080C0170C. THE TEMPORARY ACCESS ROAD IS FOR ACCESS ONLY AND NO FILL SHALL BE PLACED WITHIN THE FLOODPLAIN AREA.

**MISS UTILITY STATEMENT:**

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

**ENTRANCE PERMIT:**

ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-105) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

**ENVIRONMENTAL NOTES:**

STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN SEPTEMBER 2017 & APRIL, 2019 BY GAI CONSULTANTS, INC. TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE APRIL 10, 2019 STREAM AND WETLAND DELINEATION INDEX MAP WAS PREPARED BY GAI CONSULTANTS, INC. AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.

**GEOTECHNICAL NOTES:**

THE PROPOSED ACCESS ROAD CUT SLOPE (1.5:1) SHALL BE FIELD VERIFIED BY A CERTIFIED GEOTECHNICAL ENGINEER TO ENSURE THE PROPOSED SLOPES ARE APPROPRIATE PRIOR TO CONSTRUCTION. ACCESS ROAD CONSTRUCTION SHALL BE MONITORED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER OR PROJECT DESIGN ENGINEER DURING CONSTRUCTION.

A SUBSURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED BY PENNSYLVANIA SOIL & ROCK, INC. ON MARCH 14-20, 2019. THE REPORT PREPARED BY PENNSYLVANIA SOIL & ROCK, INC. DATED APRIL 09, 2019, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY PENNSYLVANIA SOIL & ROCK, INC. FOR ADDITIONAL INFORMATION, AS NEEDED.

**PROJECT CONTACTS:**

CHARLES E. COMPTON, III - UTILITY COORDINATOR  
CELL: (304) 718-6449

RICHARD LYLES - LAND AGENT  
CELL: (770) 378-8893

ENGINEER/SURVEYOR:  
NAVITUS ENGINEERING, INC.  
CHRIS S. KUMP, PE - PROJECT MANAGER/ENGINEER  
OFFICE: (888) 662-4186 CELL: (540) 698-8747

ENVIRONMENTAL:  
GAI CONSULTANTS, INC.  
JASON A. COOK - SENIOR ENVIRONMENTAL  
OFFICE: (304) 828-8100 CELL: (304) 382-8217

GEOTECHNICAL:  
PENNSYLVANIA SOIL & ROCK, INC.  
CHRISTOPHER W. SANDER - PROJECT ENGINEER  
OFFICE: (412) 372-4596 CELL: (412) 589-9662

OPERATOR:  
ANTERO RESOURCES CORPORATION  
655 WHITE OAK BLVD  
BRIDGEPORT, WV 26330  
PHONE: (304) 842-4100  
FAX: (304) 842-4102

DIANA HOFF - SUP OPERATIONS  
OFFICE: (303) 577-6904

ARON KUNZLER - CONSTRUCTION MANAGER  
CELL: (304) 842-4101

ROBERT WORKS - DESIGN MANAGER  
OFFICE: (304) 842-4100 CELL: (304) 827-74055

**RESTRICTIONS NOTES:**

- THERE ARE NO WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LAD. THERE IS A PERENNIAL STREAM ADJACENT TO ACCESS ROAD "A" & CO. RT. 82 BUMP-OUT WHICH WILL REMAIN UNDISTURBED.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LAD.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LAD.
- THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
- THERE IS AN EXISTING HUNTING CABIN 486.8 FEET FROM THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 825 FEET OF THE CENTER OF THE WELL PAD.

**REPRODUCTION NOTE**

"THESE PLANS WERE CREATED TO BE PLOTTED ON 22"x34" (ANSI D) PAPER. NAEP 30342 DRAWINGS ARE ON 11"x17" (ANSI B) PAPER.

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



**SHEET INDEX:**

- 1 - COVER SHEET
- 2 - CONSTRUCTION AND EAS CONTROL NOTES
- 3 - LEGEND
- 4 - MATERIAL QUANTITIES
- 5 - STORM DRAINAGE & EAS COMPUTATIONS
- 6 - EXISTING CONDUITS
- 7 - EXISTING STRUCTURES & FEATURES
- 8 - OVERALL PLAN SHEET INDEX & VOLUMES
- 9 - ACCESS ROAD PLAN
- 10 - ACCESS ROAD & WATER CONTAINMENT PAD PLAN
- 11 - ACCESS ROAD & WELL PAD PLAN
- 12 - WELL PAD & STOCKPILE PLAN
- 13 - WELL PAD GRADING PLAN
- 14 - WATER CONTAINMENT PAD GRADING PLAN
- 15 - ACCESS ROAD PROFILES
- 16 - ACCESS ROAD SECTIONS
- 17 - ACCESS ROAD & STOCKPILE SECTIONS
- 18 - ACCESS ROAD SECTIONS
- 19 - ACCESS ROAD SECTIONS
- 20 - WATER CONTAINMENT PAD SECTIONS
- 21 - WATER CONTAINMENT PAD SECTIONS
- 22-29 - CONSTRUCTION DETAILS
- 30 - ACCESS ROAD RECLAMATION PLAN
- 31 - ACCESS ROAD & WATER CONTAINMENT PAD RECLAMATION PLAN
- 32 - ACCESS ROAD & WELL PAD RECLAMATION PLAN
- 33 - WELL PAD & STOCKPILE RECLAMATION PLAN
- GE500-GE506 - GEOTECHNICAL DETAILS

SHEPHERD LIMITS OF DISTURBANCE AREA (AC)	
Total Site	
Access Road "A" (1,819)	9.34
Temporary Access Road "B"	1.52
Co. Rt. 82 Bump-Out	0.38
Well Pad	8.13
Water Containment Pad	4.21
Excess/Topsoil Material Stockpiles	3.55
Total Affected Area	28.43
Total Wooded Acres Disturbed	12.93
Impacts to Sandy Hopper Tr 15-27	
Access Road "A" (242)	1.39
Co. Rt. 82 Bump-Out	0.38
Total Affected Area	4.27
Total Wooded Acres Disturbed	1.18
Impacts to Heath M. Howell Part of Tr 15-45	
Access Road "A" (175)	0.44
Well Pad	0.19
Total Affected Area	0.63
Total Wooded Acres Disturbed	0.22
Impacts to Heath M. Howell Part of Tr 15-25, 20, 31 & 22	
Access Road "A" (79)	1.40
Well Pad	2.32
Excess/Topsoil Material Stockpiles	0.09
Total Affected Area	4.81
Total Wooded Acres Disturbed	3.07
Impacts to Heath M. Howell Part of Tr 15-31 & 15-35	
Access Road "A" (89)	1.21
Water Containment Pad	0.91
Total Affected Area	2.12
Total Wooded Acres Disturbed	0.09
Impacts to John B. & Tammy L. Shepherd Tr 15-5	
Access Road "A" (207)	1.00
Temporary Access Road "B"	0.42
Water Containment Pad	3.30
Total Affected Area	4.72
Total Wooded Acres Disturbed	3.14
Impacts to John B. & Tammy L. Shepherd Tr 15-20	
Access Road "A" (315)	1.59
Temporary Access Road "B"	1.37
Well Pad	0.15
Total Affected Area	3.11
Total Wooded Acres Disturbed	0.29
Impacts to John B. & Tammy L. Shepherd Tr 15-29	
Access Road "A" (313)	1.31
Well Pad	5.27
Excess/Topsoil Material Stockpiles	3.46
Total Affected Area	10.04
Total Wooded Acres Disturbed	3.54
Impacts to Shiley E.L.B. Church Tr 15-37	
Temporary Access Road "B"	0.02
Total Affected Area	0.02
Total Wooded Acres Disturbed	0.00
Impacts to Gerry L. Wright, ELA Tr 15-35	
Temporary Access Road "B"	0.01
Total Affected Area	0.01
Total Wooded Acres Disturbed	0.00

Well Name	WV North NAD 27	NAD 27 Lat & Long	UTM (METERS) ZONE 17	NAD 83 Lat & Long
Permitted Location				
Rapids	N 327914.47	LAT 39-25-38.4147	N 4390475.79	LAT 39-25-38.7101
Unit 1H	E 1845709.89	LONG 80-45-40.7794	E 520567.75	LONG 80-45-40.1824
Rapids	N 327903.44	LAT 39-25-38.9528	N 4390480.34	LAT 39-25-38.6362
Unit 2H	E 1845837.81	LONG 80-45-40.7854	E 520587.30	LONG 80-45-40.1435
Gate 7H	N 327844.42	LAT 39-25-36.7108	N 4390464.91	LAT 39-25-37.5062
Unit 1H	E 1845838.82	LONG 80-45-40.7925	E 520567.90	LONG 80-45-40.1545
Gate 8H	N 327919.39	LAT 39-25-39.8950	N 4390469.49	LAT 39-25-37.1543
Unit 2H	E 1845930.44	LONG 80-45-40.7915	E 520567.71	LONG 80-45-40.1295
Gate 9H Unit 3H (Permitted)	N 327941.48	LAT 39-25-38.9872	N 4390484.21	LAT 39-25-38.9825
Gate 10H Unit 4H (Permitted)	E 1845837.81	LONG 80-45-40.2722	E 520576.19	LONG 80-45-40.8485
Proposed Well Pad Elev 650'			975.0	

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

**DESIGN CERTIFICATION:**  
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED BY ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS 285-35-6.



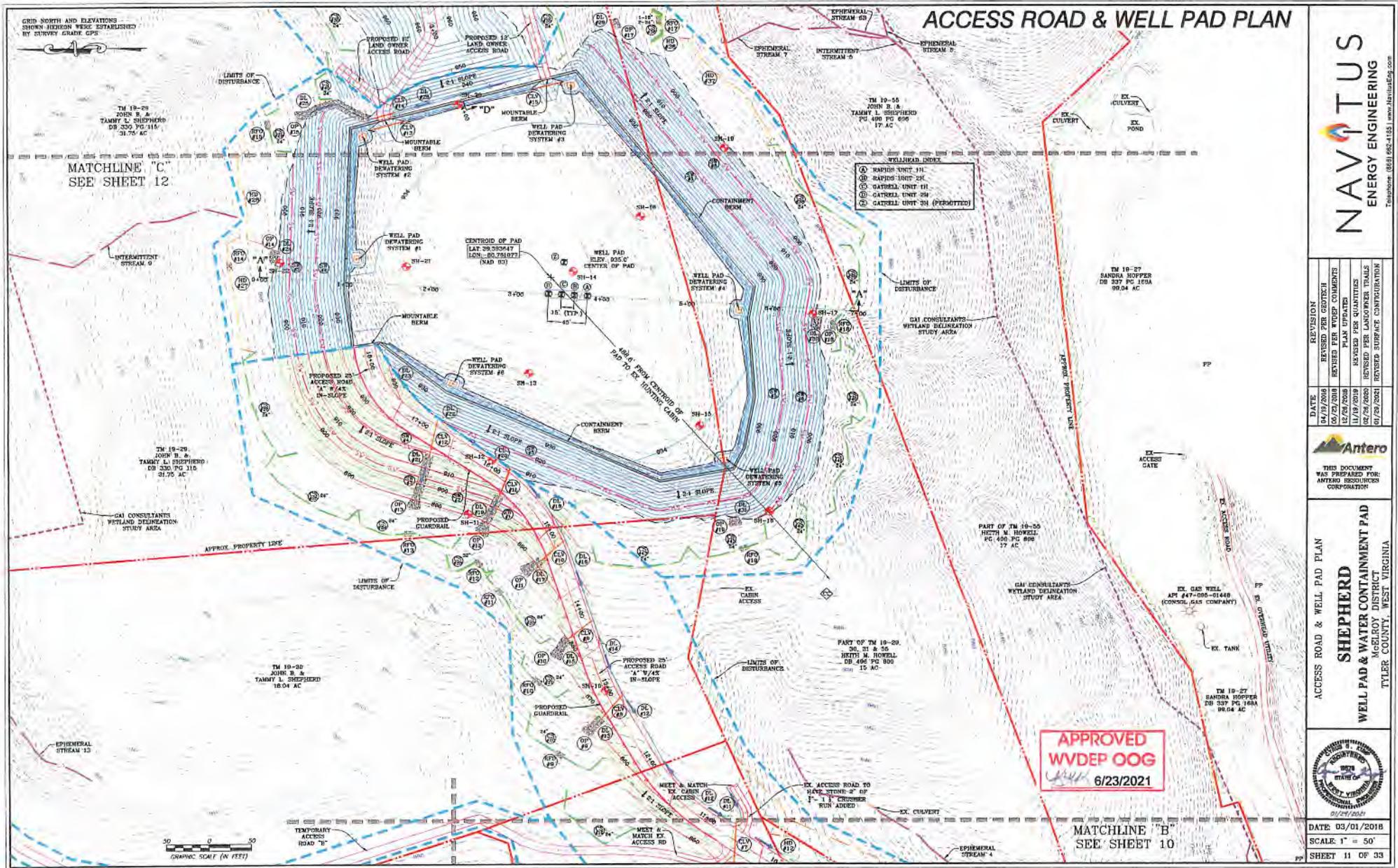
DATE	REVISION	REVISED PER CODE/CL	REVISED PER PERM COMMENTS	REVISED PER QUANTITIES	REVISED PER LANDOWNER TRAILS	REVISED PER SPECIFICATION
04/19/2021						
05/26/2021						
11/29/2021						
02/28/2022						
07/29/2021						

COVER SHEET  
**SHEPHERD**  
**WELL PAD & WATER CONTAINMENT PAD**  
McELROY DISTRICT  
TYLER COUNTY, WEST VIRGINIA



DATE: 03/01/2016  
SCALE: AS SHOWN  
SHEET 1 OF 33

4709502740



**NAVITUS**  
ENERGY ENGINEERING

DATE	REVISION
04/19/2016	REVISED PER GEOTECH
06/22/2016	REVISED PER WDEP COMMENTS
12/09/2016	PLAN UPDATES
11/19/2019	REVISED PER QUANTITIES
02/29/2020	REVISED PER LANDOWNER TALKS
01/20/2021	REVISED SURFACE CONFIGURATION



THIS DOCUMENT WAS PREPARED FOR:  
**ANTERO RESOURCES CORPORATION**

**ACCESS ROAD & WELL PAD PLAN**

**SHEPHERD**

**WELL PAD & WATER CONTAINMENT PAD**

AGUILAY DISTRICT  
TYLER COUNTY, WEST VIRGINIA



DATE: 03/01/2018  
SCALE: 1" = 50'  
SHEET 11 OF 33