



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Thursday, November 5, 2020
WELL WORK PERMIT
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit approval for TAPEATS UNIT 1H
47-095-02713-00-00

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: TAPEATS UNIT 1H
Farm Name: KENNETH TOMBLIN ET AL
U.S. WELL NUMBER: 47-095-02713-00-00
Horizontal 6A New Drill
Date Issued: 11/05/2020

PERMIT CONDITIONS

4709502713

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

CONDITIONS

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

API Number: _____

4709502713

PERMIT CONDITIONS

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

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 Ellsworth Porter Falls 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Tapeats Unit 1H Well Pad Name: Grand Pad

3) Farm Name/Surface Owner: Kenneth Tomblin et al Public Road Access: Gorrells Run Road

4) Elevation, current ground: 1268' Elevation, proposed post-construction: ~1243'

5) Well Type (a) Gas Oil Underground Storage
Other
(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7300' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 7300' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 7300' MD

11) Proposed Horizontal Leg Length: 0'

12) Approximate Fresh Water Strata Depths: 25'

13) Method to Determine Fresh Water Depths: 47-095-02267

14) Approximate Saltwater Depths: 2305'

15) Approximate Coal Seam Depths: 431'

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: _____

John Cragin
Blevins
Digitally signed by John Cragin Blevins
Date: 2020.10.28 09:15:59 -0400

10/28/2020

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	80	80	CTS, 218 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#	7300	7300	1601 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

JCB
10/28/2020

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	50	Class A	~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	Lead-HPOZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

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

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

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

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): Existing 44.34 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 13.72 acres

23) Describe centralizer placement for each casing string:

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

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

Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake
Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat
Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51
Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

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25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.



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Tapeats Unit 1H



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Antero Resources Corporation

Tapeats Unit 1H - AOR



REMARKS
No Wells of Interest

September 29, 2020

WW-9
(4/16)

4709502713

API Number 47 - 095 - _____
Operator's Well No. Tapeats Unit 1H

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) Outlet Middle Island Creek Quadrangle Porter Falls 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)

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/Stiff Foam, Production - Water Based Mud

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

Additives to be used in drilling medium? Please See Attachment

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

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

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

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

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

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

Company Official Signature Gretchen Kohler

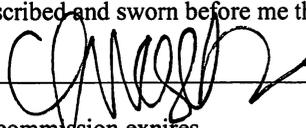
Company Official (Typed Name) Gretchen Kohler

Company Official Title Senior Environmental & Regulatory Manager

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OCT 1 2020

Subscribed and sworn before me this 20th day of SEPTEMBER, 2020



Notary Public

My commission expires MARCH 13, 2022

WV Department of
Environmental Protection

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

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 44.34 acres Prevegetation pH _____

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

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

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Main Access Road (12.10 acres) + Well Pad (13.72 acres) + Staging Area (4.57 acres) + Excess/Topsoil Stockpiles (13.95 acres) = 44.34 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 3 for additional seed type (Grand Pad Design Sheet Page 4)

See attached Table 4A for additional seed type (Grand Pad Design Sheet Page 4)

*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: J Cragin Blevins

Comments: _____

Title: Oil & Gas Inspector Date: 10/28/2020

Field Reviewed? () Yes () No

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

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

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

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

PRODUCTION INTERVAL

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

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

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911 Address
6083 Gorrells Run Road
Middlebourne, WV 26149

Well Site Safety Plan

Antero Resources

Well Name: Grand Unit 5H, Tapeats Unit 1H-3H & Vishnu Unit 1H-2H

Pad Location: GRAND PAD

Tyler County/Ellsworth District

GPS Coordinates:

Entrance - Lat 39°50'00.66"/Long -80°81'03.33" (NAD83)

Pad Center - Lat 39°50'74.76"/Long -80°81'06.74" (NAD83)

JCB
10/28/2020

Driving Directions:

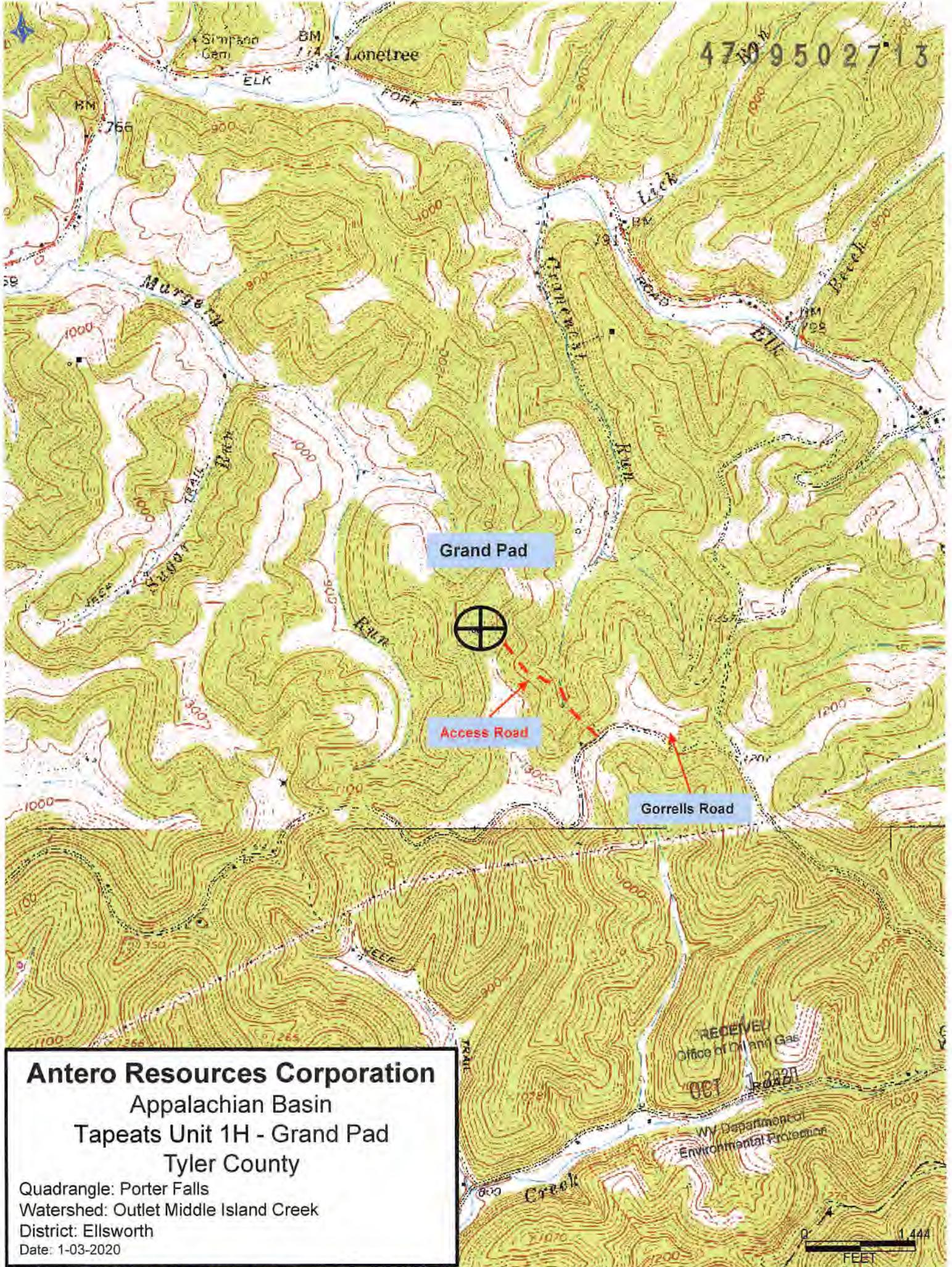
From Middlebourne: head northeast on Main Street toward Court Street/Dodd Street for 0.2 miles - turn right onto park Avenue for 397 feet - turn left onto Gorrells Run Road for 0.4 miles - continue onto Gorrells Run Road for 2.8 miles - turn right to stay on Gorrells Run Road for 3.2 miles - lease road will be on your left.

Alternate Route:

From Centerville: Head south on Klondike Ridge toward WV-18 S for 0.2 miles - turn left onto WV-18 N for 2.0 miles - turn right onto Indian Creek Road for 1.0 mile - turn left onto Big Run Road for 4.8 miles - continue onto Left Hand Fork Walnut Run for 0.3 miles - turn left onto Gorrells Run/Kingsley Ridge for 3.7 miles - lease road will be on your right.

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

1



47° 09' 50.27" N
127° 13' 00.00" W

Grand Pad

Access Road

Gorrells Road

Antero Resources Corporation
Appalachian Basin
Tapeats Unit 1H - Grand Pad
Tyler County

Quadrangle: Porter Falls
Watershed: Outlet Middle Island Creek
District: Ellsworth
Date: 1-03-2020

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0 1,444
FEET

LATITUDE 39°32'30"

5,354'

Antero Resources Corporation Well No. Tapeats Unit #1H

WV NORTH ZONE
GRID NORTH

ALFRED STEELE
D.B. 228 PG. 369
T.M. 16 PAR. 17
55.13 AC. ±

HARVEY MILLER
D.B. 500 PG. 536
T.M. 16 PAR. 15
65 AC. ±

MICHAEL TOMBLIN
D.B. 244 PG. 411
T.M. 16 PAR. 29
55 AC. ±

BARBARA KITTLE
D.B. 336 PG. 677
T.M. 16 PAR. 26
67.31 AC. ±

WELL NO. 1H

S. A. SMITH AND
C. B. MORRIS HEIRS
TRUST LEASE

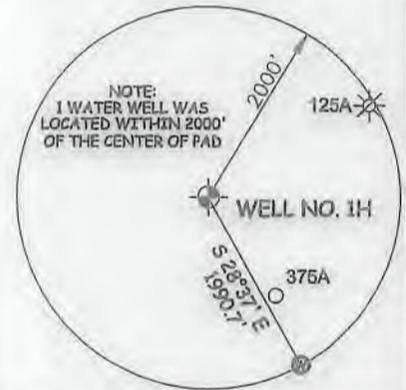
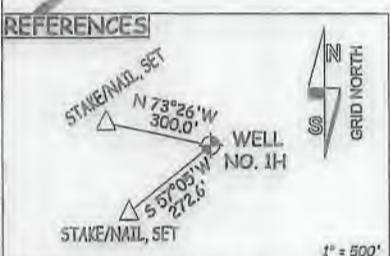
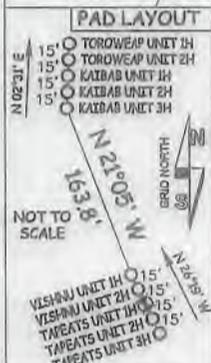
KENNETH TOMBLIN
D.B. 244 PG. 413
T.M. 16 PAR. 28
290.32 AC. ±



GILBERT EDDY
W.B. 22 PG. 44
T.M. 16 PAR. 27
92.25 AC. ±

- NOTES**
- 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. THERE ARE NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE PROPOSED WELL.
 - LEASE BOUNDARY AND BEARINGS AND DISTANCES SHOWN HEREON ARE TAKEN FROM TYLER COUNTY DEED BOOK 244 AT PAGE 413.

NOTES:
WELL 1H TOP HOLE INFORMATION:
WV STATE PLANE NAD 27 COORDS:
N: 369,500ft E: 1,630,205ft
GEOGRAPHIC NAD 27 COORDS:
LAT: 39°30'25.52" LON: 80°48'38.31"
(NAD) 83 (UTM) ZONE 17 COORDS:
N: 4,373,077m E: 516,294m
(NAD) 27 (UTM) ZONE 17 COORDS:
N: 14,346,623ft E: 1,693,828ft
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.



JOB # 20-002WA
DRAWING # TAPEATS1HSHORT
SCALE 1" = 500'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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



STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
266 HUSHERS RUN RD PENNSBORO
WEST VIRGINIA 26415

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

D.R. Rowe
DOUGLAS R. ROWE P.S. 2202

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

DATE 09/15/20
OPERATOR'S WELL# TAPEATS UNIT #1H

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT
LOCATION: ELEVATION ORIGINAL - 1,268' PROPOSED - 1,243' WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE PORTER FALLS 7.5' DISTRICT ELLSWORTH COUNTY TYLER
SURFACE OWNER KENNETH TOMBLIN ET AL ACREAGE 290.32 ACRES +/-
OIL & GAS ROYALTY OWNER S. A. SMITH AND C. B. MORRIS HEIRS TRUST LEASE ACREAGE 290.32 ACRES ±
PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR
STIMULATE PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___ ESTIMATED DEPTH 7,300' TVD 7,300' MD
TARGET FORMATION MARCELLUS DIANNA STAMPER
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

LATITUDE 39°32'30"

5,354'

Antero Resources Corporation Well No. Tapeats Unit #1H

WV NORTH ZONE
GRID NORTH

ALFRED STEELE
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55 AC. ±

BARBARA KITTLE
D.B. 336 PG. 677
T.M. 16 PAR. 26
67.31 AC. ±

WELL NO. 1H

S. A. SMITH AND
C. B. MORRIS HEIRS
TRUST LEASE

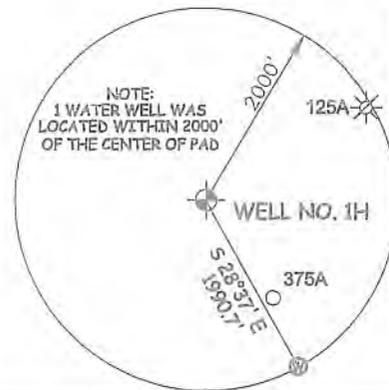
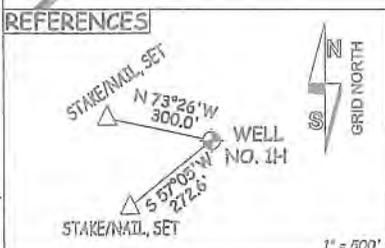
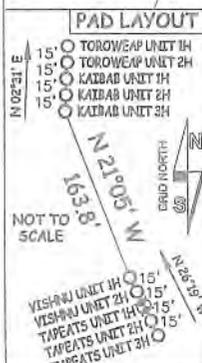
KENNETH TOMBLIN
D.B. 244 PG. 413
T.M. 16 PAR. 28
290.32 AC. ±

GILBERT EDDY
W.B. 22 PG. 44
T.M. 16 PAR. 27
92.25 AC. ±



- NOTES**
- 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. THERE ARE NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE PROPOSED WELL.
 - LEASE BOUNDARY AND BEARINGS AND DISTANCES SHOWN HEREON ARE TAKEN FROM TYLER COUNTY DEED BOOK 244 AT PAGE 413.

NOTES:
WELL 1H TOP HOLE INFORMATION:
WV STATE PLANE NAD 27 COORDS:
N: 369,500ft E: 1,630,205ft
GEOGRAPHIC NAD 27 COORDS:
LAT: 39°30'25.52" LON: 80°48'38.31"
(NAD) 83 (UTM) ZONE 17 COORDS:
N: 4,373,077m E: 516,294m
(NAD) 27 (UTM) ZONE 17 COORDS:
N: 14,346,623ft E: 1,693,828ft
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.



JOB # 20-002WA
DRAWING # TAPEATS1HSHORT
SCALE 1" = 500'
MINIMUM DEGREE OF
ACCURACY SUBMETER
PROVEN SOURCE OF ELEV.
SUBMETER MAPPING GRADE GPS

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



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

WILLOW LAND SURVEYING PLLC
266 HUSHERS RUN RD PENNSBORO
WEST VIRGINIA 26415

LEGEND

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

DOUGLAS R. ROWE P.S. 2202

DATE 09/15/20
OPERATOR'S WELL# TAPEATS UNIT #1H

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT
LOCATION: ELEVATION ORIGINAL - 1,268' PROPOSED - 1,243' WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE PORTER FALLS 7.5' DISTRICT ELLSWORTH COUNTY TYLER

SURFACE OWNER KENNETH TOMBLIN ET AL ACREAGE 290.32 ACRES +/-
OIL & GAS ROYALTY OWNER S. A. SMITH AND C. B. MORRIS HEIRS TRUST LEASE ACREAGE 290.32 ACRES ±

PROPOSED WORK: DRILL CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR
STIMULATE PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION

OTHER PHYSICAL CHANGE IN WELL (SPECIFY) ___
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___ ESTIMATED DEPTH 7,300' TVD 7,300' MD
TARGET FORMATION MARCELLUS DIANNA STAMPER

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

12,595'

LONGITUDE 80°47'30"

COUNTY NAME PERMIT

Operator's Well Number Tapeats Unit 1H

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
<u>S.A. Smith & C. B. Morris Heirs Trust Lease</u> S.A. Smith & C. B. Morris Trust Heirs	Antero Resources Corporation	1/8+	0022/0268

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

WW-6A1
(5/13)

Operator's Well No. Tapeats Unit 1H

**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>S.A. Smith & C.B. Morris Heirs Trust Lease</u>	S.A. Smith & C. B. Morris Heirs Trust	Antero Resources Corporation	1/8+	0022/0268

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

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

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

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

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

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



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 57th Street SE
Charleston, WV 25304

RE: Tapeats Unit 1H
Quadrangle: Porter Falls 7.5'
Tyler County/Ellsworth District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Tapeats Unit 1H 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 Tapeats Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

A handwritten signature in black ink, appearing to read "Tyler Adams", is written over a large, stylized flourish.

Tyler Adams
Landman

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WV Department of
Environmental Protection

4709502713

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

Date of Notice Certification: 09/29/2020

API No. 47- 095 -
Operator's Well No. Tapeats Unit 1H
Well Pad Name: Grand 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>516294m</u>
County:	<u>Tyler</u>		Northing:	<u>4373077m</u>
District:	<u>Ellsworth</u>	Public Road Access:	<u>Gorrells Run Road</u>	
Quadrangle:	<u>Porter Falls 7.5'</u>	Generally used farm name:	<u>Kenneth Tomblin et al</u>	
Watershed:	<u>Outlet Middle Island Creek</u>			

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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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.

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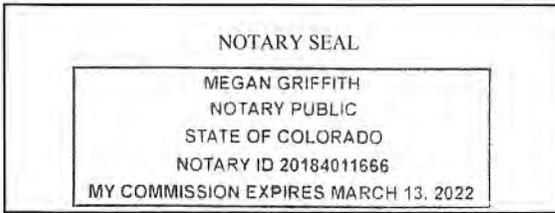
4709502713

Certification of Notice is hereby given:

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

Well Operator: Antero Resources Corporation
By: Diana Hoff *Diana O. Hoff*
Its: Senior VP of Operations
Telephone: 303-357-7223

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



Subscribed and sworn before me this 30th day of September 2020
Megan Griffith Notary Public
My Commission Expires MARCH 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 deprivacyofficer@wv.gov.

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**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: 9/30/2020 **Date Permit Application Filed:** 9/30/2020

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

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West Virginia Department of
Environmental Protection

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: Kenneth Tomblin et ux ✓
Address: 5913 Greencrest Drive
Hamilton, OH 45011

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Kenneth Tomblin et ux
Address: 5913 Greencrest Drive
Hamilton, OH 45011

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

COAL OPERATOR
Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL,
SPRING OR OTHER WATER SUPPLY SOURCE
Name: NONE IDENTIFIED WITHIN 1500'
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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 and Gas 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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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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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

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OCT 1 1:02:00
W.V. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Environmental Protection

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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WW-6A
(8-13)

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API NO. 47-095 -
OPERATOR WELL NO. Tapeats Unit 1H
Well Pad Name: Grand Pad

Notice is hereby given by:

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7223 Diana O. Hoff
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 deprivacyofficer@wv.gov.

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

Subscribed and sworn before me this 30th day of September 2020
Megan Notary Public
My Commission Expires MARCH 13, 2022

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

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

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

Date of Notice: 02/05/2020 **Date Permit Application Filed:** 09/30/2020

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: Kenneth Tomblin
Address: 5913 Greencrest Drive
Hamilton, OH 45011

Name: _____
Address: _____

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>516294m</u>
County:	<u>Tyler</u>		Northing:	<u>4373077m</u>
District:	<u>Ellsworth</u>	Public Road Access:	<u>Gorrells Run Road</u>	
Quadrangle:	<u>Porter Falls 7.5'</u>	Generally used farm name:	<u>Kenneth Tomblin et al</u>	
Watershed:	<u>Outlet Middle Island Creek</u>			

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: Antero Resources Appalachian Corporation
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7223
Email: mgriffith@anteroresources.com
Facsimile: 303-357-7315

Authorized Representative: Megan Griffith
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7310
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.

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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

September 29, 2020

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

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

Subject: DOH Permit for the Grand Pad, Tyler County
Tapeats Unit 1H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2020-0048 which has been issued to Antero Resources for access to the State Road for a well site located off Tyler County Route 34 SLS.

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.

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

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List of Anticipated Additives Used for Fracturing or Stimulating Well

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	Proprietary
Anionic polymer	Proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	Proprietary
Demulsifier Base	Proprietary
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
Guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	Proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
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 propanamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8
Coco amine	61791-14-8
2-Propyn-1-olcompound with methyloxirane	38172-91-7

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Antero Resources Corporation Erosion and Sediment Control Plan for Grand Well Site

Antero Resources Corporation (Antero) is submitting the following narrative and set of drawings in compliance with §35-8-5.4. This plan is submitted in conjunction with the Grand Well Site Erosion & Sediment Control Plan & Site Restoration Plan prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection and Office of Oil and Gas, and certified by Dieffenbach & Hritz, LLC, a West Virginia registered professional engineer.

Requirement §5.4.b.1. *A general sequence of events that describe in relative terms how and when each construction phase (i.e. clearing and grubbing, mass grading, stabilization) will occur and when each erosion and sediment control best management practice ("BMP") will be installed;*

Antero Response:

The following includes a general sequence of events that describe in relative terms how and when each construction phase is anticipated to occur and erosion and sediment control BMPs to be installed. Please refer to the "Grand Well Site Erosion & Sediment Control Plan & Site Restoration Plan" (Site Design) prepared and certified by Dieffenbach & Hritz, LLC for specific construction measures. Compliance with the measures outlined in the Site Construction Plan (§35-8-5.4) submitted in conjunction with this plan will also be maintained.

1. Stake the limits of construction and mark/flag all identified wetlands, streams, utilities, and other areas of concern for construction activities. Install signs to designate the areas and orange safety fence to identify important project attributes such as approved access roads, no refueling zones, wetlands/steam bounds, etc.
2. A pre-construction conference with the contactor and the appropriate erosion and sediment control inspector 48 hours prior to beginning work to review the construction drawings and provide any requested guidance.
3. Construct the rock construction entrance. All vehicles entering and exiting the site shall do so via the rock construction entrance.
4. Construct all BMP's as soon as clearing and grubbing operations allow. Once installed, the area encompassing the BMP's outside the grading limits shall be seeded and mulched immediately.
5. If applicable, convey upslope drainage around the Access Road, Well Pad, and Water Containment Pad areas by constructing all diversion berm(s) and/or compost filter sock diversion(s) as shown on the plans.
6. Clear and grub the site. All woody material, brush, trees, stumps, large roots, boulders, and debris shall be cleared from the site area and kept to the minimum necessary for proper construction, including the installation of necessary sediment controls. Trees, brush, & stumps shall be cut and/or grubbed and burned (as per WV forest fire laws), removed from site, or disposed of by other methods approved by WV DEP.
7. If applicable, install all wetland or stream crossings as shown on the plans.
8. Strip the topsoil from the access road. Topsoil stripping shall be kept to a minimum necessary to construct access road. Prior to placing any fill, the exposed subgrade shall be compacted and proof rolled to produce a stable and unyielding site. All stripped topsoil shall be stockpiled

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- areas shown in the plans, or re-spread at an approximate depth of 2-4 inches on all proposed 2:1 or flatter slopes, and immediately stabilized. Additional BMP measures shall be constructed around topsoil stockpiles, if necessary.
9. Construct the access road. All fill areas, including excess material stockpiles, shall be "Keyed In" and compacted in horizontal lifts with a maximum loose lift thickness of 12" and maximum particle size as outlined in the geotechnical report. All fill shall be compacted by a vibrating sheepsfoot roller to 95% per the standard proctor test (ASTM – D698). Moisture content will be controlled in accordance with the standard proctor test (ASTM – D698) results. It is also recommended that each lift be proof rolled with a loaded haul truck where applicable. Ditch relief culverts shall be installed at a grade of 1-8% to minimize outlet velocities to the extent possible. Install outlet protection once ditch relief culverts are installed, as shown on plans. Stabilize the road with geotextile fabric & stone and side slopes as specified with permanent seeding. Excess material shall be stockpiled (if necessary) in areas shown in the plans and immediately stabilized. Topsoil shall be stripped from all stockpile areas prior to construction of stockpiles. After stockpiles are constructed, topsoil is to be reapplied at a depth of 2"-4". Slopes shall be tracked by running tracked machinery up and down the slope, leaving tread marks parallel to the contour. All ditch lines shall be cleaned prior to installation of lined protection.
 10. Strip the topsoil from the well pad and water containment pad. Topsoil stripping shall be kept to a minimum necessary to construct well pad and water containment pad. Prior to placing any fill, the exposed subgrade shall be compacted and proof rolled to produce a stable and unyielding site. All stripped topsoil shall be stockpiled in areas shown in the plans, or re-spread at an approximate depth of 2-4 inches on all proposed 2:1 or flatter slopes, and immediately stabilized. Additional BMP measures shall be constructed around topsoil stockpiles, if necessary.
 11. Grade the well pad and water containment pad areas as shown on the plans. Install pad sumps (with 4" PVC drain pipe and outlet protection) and containment berm liner system. Immediately stabilize the outer areas of the well pad and water containment pad. The well pad and water containment pad areas shall be stabilized with geotextile fabric & stone and the side slopes with seed and mulch. Install all straw wattles as shown on plans. Apply seed and mulch to all disturbed areas. This shall include all areas that will not be subject to regular traffic activity (to be stabilized with stone), or any disturbed area that will not be re-disturbed before site reclamation begins.
 12. The construction site should be stabilized as soon as possible after completion. Establishment of final stabilization must be initiated no later than 7 days after reaching final grade. Final stabilization means that all soil-disturbing activities are completed, and that either a permanent vegetative cover with a density of 70% or greater has been established or that the surface has been stabilized by hard cover such as pavement or buildings. It should be noted that the 70% requirement refers to the total area vegetated and not just a percent of the site.
 13. Commence well drilling activity.
 14. All BMP's must remain in place and functional until all areas within the limit of disturbance are complete and permanently stabilized. Maintenance must include inspection of all erosion and sediment controls after each runoff event in excess of 0.5" in twenty-four (24) hour period.
 15. All permanent sediment control measures can be removed after the site is permanently stabilized and approval is received from the WVDEP.
 16. Any areas disturbed by removal of controls shall be repaired, stabilized, and permanently seeded.

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Requirement §5.4.b.2. *A description of the stabilization methods to be used, including the application rates for temporary and permanent seeding and mulching, and provide the timeframes for establishing stabilization*

Antero Response:

Stabilization methods used include seeding and mulching of disturbed areas as well as the implementation of erosion and sediment control BMPs. Please refer to “General Notes” on page 2 and “E&S Details” and “Construction Details” on pages 22-30 for detailed descriptions of the different stabilization methods to be used. Seeding and mulching is to be in accordance with the WVDOT Standard Specifications unless specified otherwise in the plans or unless specified otherwise by the construction engineer or Antero representative. Please refer to “Erosion and Sediment Control Narrative” under “General Notes” on page 2 as well as “Construction Details” on page 30 of the Site Design for more specific information regarding application, liming, and mulching rates.

Erosion and sediment BMPs will be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs. In a timely manner after earth disturbance activities cease, Antero shall stabilize any areas disturbed by the activities. During non-germination periods, mulch must be applied at the specified rates. Disturbed areas which are not at finish grade and which will be re-disturbed within 1 year will be stabilized in accordance with the temporary vegetative stabilization and specifications. Disturbed areas which are finished grade or which will not be re-disturbed within 1 year will be stabilized in accordance with the permanent vegetative stabilization specification. Please refer to “General Notes” on page 2 for more information regarding timeframes for establishing stabilization and erosion and sediment BMPs.

The site shall be considered to have achieved full stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics to resist sliding and other movements. Until the site achieves final stabilization, Antero will assure that the best management practices (BMPs) are implemented, inspected, operated, and maintained. As such, Antero will maintain written inspection logs. All maintenance work, including cleaning, repair, replacement, regarding, and re-stabilization shall be performed immediately upon discovery of deficiency. After final stabilization has been achieved, temporary erosion and sediment BMPs controls will be removed. Areas disturbed during removal of the BMPs will be stabilized immediately.

Requirement §5.4.b.3. *Details of specifications for the erosion and sediment control BMPs employed on the project.*

Antero Response:

Please refer to the “General Notes” on page 2 and “E&S Details” and “Construction Details” on pages 22-30 in the Site Design for specifications including instructions for installation, inspection, and maintenance for erosion and sediment control BMPs employed at this site.

Requirement §5.4.c.1. *A vicinity map locating the site in relation to the surrounding area and roads;*

Antero Response:

A vicinity map locating the site in relation to the surrounding area and roads is included on page 1 of the Site Design.

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Requirement §5.4.c.2 A plan view site map at a scale of one inch equal to one hundred feet (1"=100') or greater, showing appropriate detail of all site features, including the identification of site access that provides for a stabilized construction entrance and exit to reduce tracking of sediment onto public or private roads; and

Antero Response:

"Overall E&S Plan" and "Proposed Site Plan" maps are included on pages 7-10 of the Site Design. Specific design, layout and inspection and maintenance notes for a stabilized construction entrance are included in the "General Notes" verbiage on page 2.

Requirement §5.4.c.3. The location of all proposed erosion and sediment control BMPs

Antero Response:

"Overall E&S Plan" and "Proposed Site Plan" maps are included on pages 7-10 of the Site Design to locate all proposed erosion and sediment control BMPs.

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LOCATION COORDINATES				
SITE LOCATIONS	WVA-57 (NORTH CORN)		07045-17	
	LATITUDE	LONGITUDE	NORTHING	EASTING
WVA ACCESS ROAD ENTRANCE	38.800001	-80.810003	4372283.966	0.0007402
CENTER OF WELL PAD	39.007919	-80.810074	4373111.287	916276.524

GENERAL DESCRIPTION:
THE ACCESS ROAD, WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED TO FACILITATE THE DEVELOPMENT OF AN INDIVIDUAL UNDESIGNED SMALL DAMS WELLS.

FLOODPLAIN NOTES:
THE PROPOSED SITE LOCATION IS NOT WITHIN ANY FLOODPLAIN AS PER FEMA MAP NUMBER 15462SD002C-ZONE X.

MISS UTILITY STATEMENT:
ANTERO RESOURCES CORP. WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN TOGETHER WITH OTHERS IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT:
ANTERO RESOURCES CORP. WILL OBTAIN AN ENTRANCE PERMIT FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, ROAD USE CONSTRUCTION PERMIT, FOR CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN NOVEMBER 2014 BY GAI CONSULTANTS 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 THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE NOVEMBER 2014 STREAM AND WETLAND DELINEATION MAP WAS PREPARED BY GAI CONSULTANTS AND EXAMINED THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, IMPLY OR BE A JURISDICTIONAL DETERMINATION OF THE USACE OR WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDNR. IT IS STRONGLY RECOMMENDED THAT THE APPLICANT AND AGENCIES BE CONSULTED IN AN EFFORT TO OBTAIN CONFIRMATION OF THE DELINEATION SHOWN ON THE EXHIBIT PRIOR TO ENGAGING IN CONSTRUCTION ON THE PROJECTS DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATER OF THE U.S. INCLUDING WETLAND FILL AND STREAM CHANNELS.

GEO TECHNICAL NOTES:
THE PROPOSED SLOPES (3:1) SHALL BE FIELD VERIFIED BY A CERTIFIED GEOTECHNICAL ENGINEER TO ENSURE THE PROPOSED SLOPES ARE ADEQUATE PRIOR TO CONSTRUCTION. SITE CONSTRUCTION SHALL BE MONITORED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER OR PROJECT DESIGN ENGINEER DURING CONSTRUCTION.

A SURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED BY MRC, LLC. THE RECOMMENDATIONS REFLECTED IN THE RESULTS OF THE SURFACE INVESTIGATION, THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SURFACE INVESTIGATION REPORT BY MRC, LLC FOR ADDITIONAL INFORMATION, AS NEEDED.

- RESTRICTION NOTES:**
1. THERE ARE NO LAYERS OR BEDROCK WITHIN 10 FEET OF THE WELL PAD LDO.
 2. THERE ARE NO WETLANDS TO BE DISTURBED OR WITHIN 100' OF THE WELL PAD LDO.
 3. THERE ARE NO SIGNIFICANT STREAM IMPACTS THAT WILL NEED TO BE PERMITTED BY THE APPROPRIATE AGENCIES.
 4. THERE ARE NO PERSONAL STREAMS WITHIN 100 FEET OF THE WELL PAD LDO.
 5. THERE ARE NO NATURALLY OCCURRING TROPIC STRONGS WITHIN 100 FEET OF THE WELL PAD LDO.
 6. THERE ARE NO WETLANDS WITHIN 100 FEET OF THE WELL PAD LDO.
 7. THERE ARE NO ADJACENT EXISTING WATER WELLS OR DEVELOPED AREAS WITHIN 100 FEET OF THE WELL PAD LDO.
 8. THERE ARE NO EXISTING STRUCTURES WITHIN 100 FEET OF THE CENTER OF THE WELL PAD LDO.
 9. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,000 SQUARE FEET WITHIN 100 FEET OF THE CENTER OF THE WELL PAD.

PROJECT CONTACTS:

OPERATOR:
ANTERO RESOURCES CORPORATION
300 WHITE OAK BLVD
BRIDGEPORT, WV 26030
PHONE: (304) 862-4100
FAX: (304) 862-4102

ENGINEER/SURVEYOR:
DIEFFENBAUCH & HRITZ, LLC
ERIC N. STANWART, P.E. / ENGINEERING MANAGER
OFFICE: (204) 836-8595
CELL: (504) 947-9192

ENVIRONMENTAL:
GAI CONSULTANTS
JANIS V. GIBSON, PROJECT MANAGER
PHONE: (304) 528-3300

GEO TECHNICAL:
MRC, LLC
DAN W. WILSON, MANAGING GEOTECHNICAL ENGINEER
OFFICE: (204) 271-0100
CELL: (704) 348-7888

REGULATORY CONTACTS:
MARCUS W. KIMBLE, COUNTY ENGINEER
OFFICE: (204) 862-4131

WV DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP):
OFFICE: (304) 251-6100 (OFFICE) (304) 251-6100 (FAX)

US ARMY CORPS OF ENGINEERS (USACE):
OFFICE: (304) 251-6100 (OFFICE) (304) 251-6100 (FAX)

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION (WVDOT):
OFFICE: (304) 251-6100 (OFFICE) (304) 251-6100 (FAX)

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP):
OFFICE: (304) 251-6100 (OFFICE) (304) 251-6100 (FAX)

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WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP):
OFFICE: (304) 251-6100 (OFFICE) (304) 251-6100 (FAX)

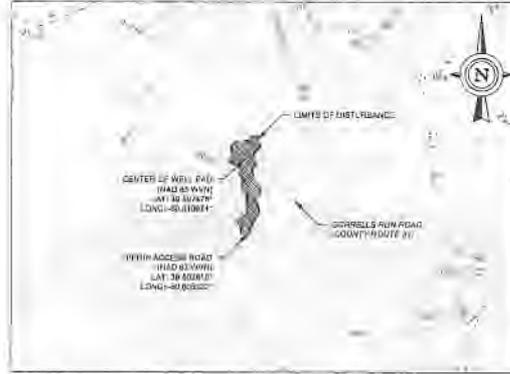
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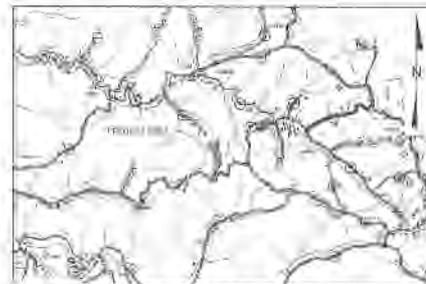
EROSION & SEDIMENT CONTROL PLAN & SITE RESTORATION PLAN

GRAND WELL SITE

ELLSWORTH DISTRICT, TYLER COUNTY, WV FOR ANTERO RESOURCES CORPORATION



REF: WVA-57 (NORTH CORN) 07045-17 (EAST CORN) 07045-17 (WEST CORN) 07045-17 (SOUTH CORN) 07045-17



VICINITY MAP
TYLER COUNTY ROAD MAP
SCALE IN FEET
0 1 MILE 2 MILES

INDEX			
DRAWING NO.	TITLE	DRAWING NO.	TITLE
1	TITLE SHEET	10-13	ACCESS ROAD CROSS SECTIONS
2	GENERAL NOTES	14-20	E&S TYPICAL SECTIONS
3	QUANTITIES LIST	21	TITLE SHEET
4	E&S CALCULATIONS	22-25	E&S DETAILS
5	EXISTING STRUCTURES	26	CONSTRUCTION DETAILS
6	EXISTING CONDITIONS	31	OVERALL RESTORATION SITE PLAN
7	OVERALL E&S SITE PLAN	35-36	PROPOSED SITE RESTORATION PLAN
8-9	PROPOSED SITE PLAN	35-37	GEOTECHNICAL DETAILS
11	ACCESS ROAD PROFILE	38-43	GEOTECHNICAL SUBSTRATE SUMMARY

LIMITS OF DISTURBANCE PARCEL BREAK UPS - GRAND WELL SITE						
TYLER COUNTY, WEST VIRGINIA						
OWNER	TW-FARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ADIRAGE	WOODS
TOMBLIN, MICHAEL A. & LISA B. MICHAEL	19-23	244-112	55.00	ACCESS ROAD	15.43	13.53
				WELL PAD	0.79	13.52
				SPOIL PILE #1	1.07	1.07
				SPOIL PILE #2	1.43	0.53
				SPOIL PILE #3	1.03	0.23
				SPOIL PILE #4	1.24	1.04
				SPOIL PILE #5	2.06	2.04
				SPOIL PILE #7	0.28	0.28
				PARCEL TOTAL	46.43	38.13
				SPOIL PILE #7	0.57	0.57
				PARCEL TOTAL	0.57	0.57
TOMBLIN, MICHAEL LEE	19-23	244-112	55.00			
				PARCEL TOTAL	0.57	0.57

GRADING VOLUMES			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
ACCESS ROAD	343.77	14.90	328.87
WELL PAD	170.63	21.07	149.56
SPOIL PILE #1	0	0.79	-0.79
SPOIL PILE #2	0	0.53	-0.53
SPOIL PILE #3	0	1.03	-1.03
SPOIL PILE #4	0	1.24	-1.24
SPOIL PILE #5	0	2.06	-2.06
SPOIL PILE #7	0	0.28	-0.28
TOTAL	148.43	174.82	-26.39
TOTAL EXCAVATION	148.43	174.82	-26.39

L.O.B. AREA	
DESCRIPTION	ACRES
WVA ACCESS ROAD	15.43
WELL PAD	13.52
SPOIL PILE #1	1.07
SPOIL PILE #2	1.42
SPOIL PILE #3	0.23
SPOIL PILE #4	1.04
SPOIL PILE #5	2.04
SPOIL PILE #7	0.28
TOTAL	41.66
WOODS	37.19

WELL LEGEND			
WELL PAD	WVA NORTH PAD 2	WV NORTH PAD 3	UTM#
4	38594.172	638524.112	19 077 06 11
GRAND WELL SITE	115420.711	638524.112	19 077 06 11

**APPROVED
MODIFICATION
WVDEP 0001**

6/23/2020

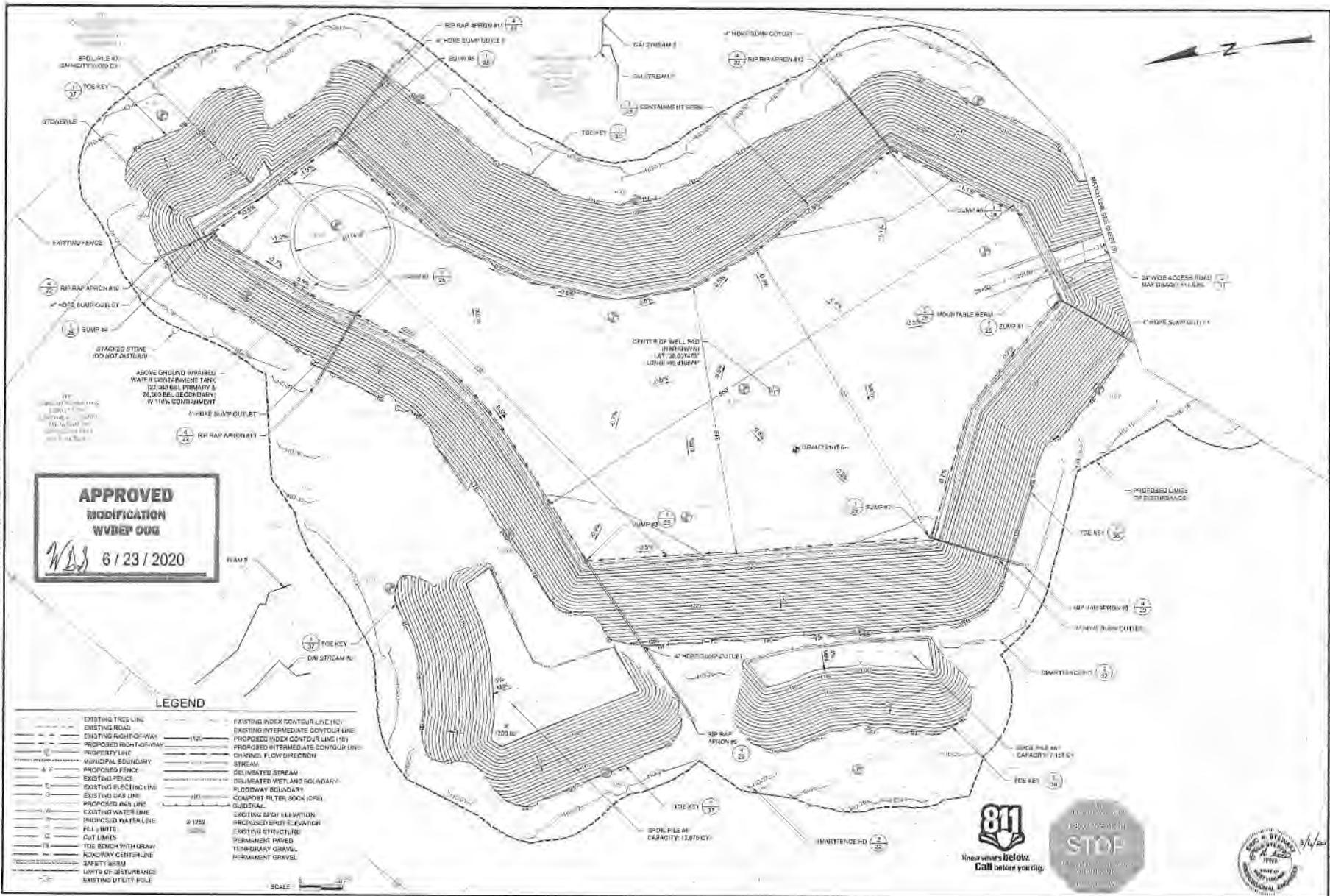
PROJECT NO. 19048-001
MAY 2020

DIEFFENBAUCH & HRITZ, LLC



TITLE SHEET
 GRAND WELL SITE
 ANTERO RESOURCES CORPORATION
 TYLER COUNTY, WV
 DIEFFENBAUCH & HRITZ, LLC
 1

SCALE: 1"=80' (SEE NOTES) STIPPLED AREAS INDICATE EXISTING WETLANDS. DASHED LINES INDICATE PROPOSED WETLANDS. PROPOSED DRAINAGE CANALS AND DRAINAGE STRUCTURES ARE SHOWN WITH DASHED LINES. PROPOSED DRAINAGE CANALS AND DRAINAGE STRUCTURES ARE SHOWN WITH DASHED LINES. PROPOSED DRAINAGE CANALS AND DRAINAGE STRUCTURES ARE SHOWN WITH DASHED LINES.



APPROVED MODIFICATION WVDSP 006
WBS 6/23/2020

LEGEND

- | | | | |
|---|------------------------|---|------------------------------------|
| — | EXISTING TREE LINE | — | EXISTING INDEX CONTOUR LINE (10') |
| — | EXISTING ROAD | — | EXISTING INTERMEDIATE CONTOUR LINE |
| — | EXISTING RIGHT-OF-WAY | — | PROPOSED INDEX CONTOUR LINE (10') |
| — | PROPOSED RIGHT-OF-WAY | — | PROPOSED INTERMEDIATE CONTOUR LINE |
| — | PROPERTY LINE | — | CHANGING FLOW DIRECTION |
| — | MUNICIPAL BOUNDARY | — | STREAM |
| — | PROPOSED FENCE | — | DELIMITED STREAM |
| — | EXISTING FENCE | — | DELIMITED WETLAND BOUNDARY |
| — | EXISTING ELECTRIC LINE | — | FLOODWAY BOUNDARY |
| — | EXISTING GAS LINE | — | COARSE FILTER SOCK (SPE) OUTLET |
| — | PROPOSED GAS LINE | — | EXISTING SIGN ILLUMINATION |
| — | EXISTING WATER LINE | — | PROPOSED SIGN ILLUMINATION |
| — | PROPOSED WATER LINE | — | EXISTING STRUCTURE |
| — | FEL LIMITS | — | PERMANENT PAVED |
| — | CUT LIMITS | — | TEMPORARY GRAVEL |
| — | THE BENCH WITH GRASS | — | PERMANENT GRAVEL |
| — | ROADWAY CENTERLINE | — | |
| — | SAFETY BEAM | — | |
| — | LIMITS OF DISTURBANCE | — | |
| — | EXISTING UTILITY POLE | — | |

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LOCATION COORDINATES				
SITE LOCATIONS	WV84-WF (NORTH ZONE)		UTMS-17	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD (1) TRANCE	39.500396	-80.810333	4372283.965	316507.402
CENTRIC OF WELL PAD	39.507476	-80.810074	4372111.707	316276.324

GENERAL DESCRIPTION:
THE ACCESS ROADS, WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDUSTRIAL MANUFACTURING DRILL OILS.

FLOODPLAIN NOTES:
THE PROPOSED SITE LOCATION IS NOT WITHIN ANY IDENTIFIED ZONES PER FEMA MAP NUMBER(S) 845025C0012C - ZONE X.

MISS UTILITY STATEMENT:
ANTERO RESOURCES CORP. WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN TOOKY 11/27/1978. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT:
ANTERO RESOURCES CORP. WILL OBTAIN AN ENCROACHMENT PERMIT (FORM WM 109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STREAM AND WETLANDS DELINEATIONS WERE PERFORMED IN NOVEMBER 2019 BY GAI CONSULTANTS 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 NOVEMBER 2019 STREAM AND WETLAND DELINEATION MAP WAS PREPARED BY GAI CONSULTANTS AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IF IT IS STRONGLY RECOMMENDED THAT THE AFOREMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO OBTAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THE EXHIBIT PRIOR TO ENGAGING IN CONSTRUCTION ON THE PROPOSED SITE DESCRIBED HEREIN, THE OWNER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED WORKS TO WATER OF THE U.S. INCLUDING WETLANDS AND STREAM CROSSINGS.

GEOTECHNICAL NOTES:
THE PROPOSED OUT/FILL SLOPES (2:1) SHALL BE FIELD VERIFIED BY A CERTIFIED GEOTECHNICAL ENGINEER TO ENSURE THE PROPOSED SLOPES ARE ADEQUATE PRIOR TO CONSTRUCTION. SITE 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 NGE, LLC, DATED MARCH 4, 2020. RESULTS OF THE SUBSURFACE INVESTIGATION, THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WERE USED IN THE PREPARATIONS OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY NGE, LLC FOR ADDITIONAL INFORMATION, AS NEEDED.

- RESTRICTION NOTES:**
- THERE ARE NO LARVES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD LOD.
 - THERE ARE NO WETLANDS TO BE DISTURBED OR WITHIN 100 FEET OF THE WELL PAD LOD.
 - THERE ARE NO EPHEMERAL STREAM IMPACTS THAT WILL NEED TO BE PERMITTED BY THE APPROPRIATE AGENCIES.
 - THERE ARE NO PERENNIAL STREAMS WITHIN 100 FEET OF THE WELL PAD LOD.
 - THERE ARE NO NATURALLY PRODUCING OILFIELD SPRINGS WITHIN 300 FEET OF THE WELL PAD LOD.
 - THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 500 FEET OF THE WELL PAD LOD.
 - THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
 - THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
 - THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,000 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

PROJECT CONTACTS:

OPERATOR:
ANTERO RESOURCES CORPORATION
533 WHITE OAK BLVD
BROOKFIELD, WV 26030
PHONE: (304) 843-4100
FAX: (304) 842-4102

ENGINEER/SURVEYOR:
DIEFFENBAUGH & HRITZ
ERICA STEWART, P.E., ENGINEERING MANAGER
OFFICE: (304) 945-6953
CELL: (304) 942-9142

ENVIRONMENTAL:
GAI CONSULTANTS
JASON COOK - PROJECT MANAGER
OFF-ICE: (304) 708-3338

GEOTECHNICAL:
NGE, LLC
GENE BROWN - MANAGER OF GEOTECHNICAL SERVICES
OFFICE: (304) 351-9196
CELL: (304) 359-7869

REGULATORY CONTACTS:
JON KNEEVERS - DIRECTOR OF CONSTRUCTION PERMITS
OFFICE: (304) 842-4101

CONSTRUCTION CONTACTS:
BRYAN REYNOLDS - DESIGN ENGINEER
OFFICE: (304) 842-4208 CELL: (304) 841-3095

UTILITY COORDINATOR:
CHARLES E. COMPTON III - UTILITY COORDINATOR
CELL: (304) 718-6448

LAND AGENT:
DAVID PATRY - LAND AGENT
OFFICE: (304) 416-6200

EROSION & SEDIMENT CONTROL PLAN & SITE RESTORATION PLAN

GRAND WELL SITE

ELLSWORTH DISTRICT, TYLER COUNTY, WV FOR ANTERO RESOURCES CORPORATION

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LIMITS OF DISTURBANCE PARCEL BREAK UPS - GRAND WELL SITE						
TYLER COUNTY, WEST VIRGINIA						
OWNER	TW-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE	WOODS
TOMBLIN, KENNETH & LORI A MICHAEL	16-28	244-413	790.32	ACCESS ROAD	16.43	13.59
				WELL PAD	13.72	13.72
				SPOIL PILE #2	1.07	1.07
				SPOIL PILE #3	1.42	0.51
				SPOIL PILE #4	2.25	3.23
				SPOIL PILE #5	1.46	1.44
				SPOIL PILE #6	2.54	2.34
TOMBLIN, MICHAEL, LEE	16-29	244-411	56.65	ACCESS ROAD	0.57	0.57
				SPOIL PILE #7	0.87	0.87
			PARCEL TOTAL	40.43	36.62	3.24
			PARCEL TOTAL	0.57	0.57	

GRADING VOLUMES			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
ACCESS ROAD	38,779	14,506	23,873
WELL PAD	110,833	81,573	29,060
SPOIL PILE #2	0	6,728	-6,728
SPOIL PILE #3	0	5,932	-5,932
SPOIL PILE #4	0	37,163	-37,163
SPOIL PILE #5	0	7,167	-7,167
SPOIL PILE #6	0	12,875	-12,875
SPOIL PILE #7	0	5,000	-5,000
TOTAL	149,612	174,324	-25,112
TOTAL EXCAVATION	169,644	181,280	-25,112

L.O.B. AREAS	
DESCRIPTION	ACRES
MAIN ACCESS ROAD	16.43
WELL PAD	13.72
SPOIL PILE #2	1.07
SPOIL PILE #3	1.42
SPOIL PILE #4	2.23
SPOIL PILE #5	1.44
SPOIL PILE #6	2.34
SPOIL PILE #7	0.85
TOTAL	41.58
WOODDED	37.19

REFERENCES: UNITED STATES GEOLOGICAL SURVEY - PORTER FALLS QUADRANGLE, WV, 7.5 MINUTE SERIES



WELL HEAD	WV NORTH ROAD 87		ROADY LAT & LONG		UTM (METERS) ZONE 17		NAD 83 LAT & LONG	
	EASTING	NORTHING	LAT	LONG	EASTING	NORTHING	LAT	LONG
GRAND UNIT 1H	1630076.16	369598.17	39.507365	-80.811132	516254.41	4373194.71	39.507436	-80.810603
A. VEHICULAR UNIT 1H	1630161.67	369273.35	39.507163	-80.810595	516230.01	4373285.38	39.507242	-80.810516
B. VEHICULAR UNIT 1H	1630195.62	369213.92	39.507128	-80.810561	516202.11	4373281.32	39.507206	-80.810491
C. TARPEDS UNIT 1H	1630205.17	369506.47	39.507090	-80.810562	516254.20	4373277.28	39.507188	-80.810487
D. TARPEDS UNIT 2H	1630216.42	369474.08	39.507070	-80.810562	516258.39	4373268.14	39.507096	-80.810418
E. TARPEDS UNIT 3H	1630216.42	369474.08	39.507070	-80.810562	516258.39	4373268.14	39.507096	-80.810418
F. TORCHWEAP UNIT 1H	1630135.56	369740.16	39.507748	-80.810890	516271.78	4373149.93	39.507824	-80.810728
G. TORCHWEAP UNIT 2H	1630134.80	369725.17	39.507704	-80.810891	516271.65	4373145.39	39.507763	-80.810725
H. KASAB UNIT 1H	1630134.24	369710.19	39.507663	-80.810891	516271.53	4373140.76	39.507742	-80.810725
I. KASAB UNIT 2H	1630133.59	369695.20	39.507621	-80.810891	516271.41	4373136.22	39.507701	-80.810721
J. KASAB UNIT 3H	1630132.93	369680.21	39.507580	-80.810890	516271.28	4373131.68	39.507659	-80.810722

VICINITY MAP
TYLER COUNTY ROAD MAP
SCALE IN FEET
1 INCH = 1 MILE

John Cragin Bleivins
Digitally signed by John Cragin Bleivins
Date: 2020.10.28 05:55:33 -0400

10/28/2020

DIEFFENBAUGH & HRITZ, LLC

Know what's below.
Call before you dig.

TITLE SHEET
 GRAND WELL SITE
 ELLSWORTH DISTRICT
 TYLER COUNTY, WV
 PROJECT NO. 19048-001
 MAY 2020
 1



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, November 2, 2020
WELL WORK PLUGGING PERMIT
Not Available Plugging

CONSOLIDATION COAL COMPANY
1 BRIDGE STREET
MONONGAH, WV 265540000

Re: Permit approval for 7274B
47-103-03364-00-00

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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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: 7274B
Farm Name: COASTAL FOREST RESOURC
U.S. WELL NUMBER: 47-103-03364-00-00
Not Available Plugging
Date Issued: 11/2/2020

I

OW 11/02/2020

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

4710303364^r

WW-4B
Rev. 2/01

1) Date OCTOBER 1, 20 20
2) Operator's
Well No. 7274B
3) API Well No. 47-103

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil ___ / Gas X / Liquid injection ___ / Waste disposal ___ /
(If "Gas, Production ___ or Underground storage ___) Deep ___ / Shallow ___

5) Location: Elevation 1086.41' Watershed PRICE RUN OF SOUTH FORK FISHING CREEK
District GRANT County WETZEL Quadrangle FOLSOM W.VA

6) Well Operator CONSOLIDATION COAL CO. 7) Designated Agent DAVID RODDY
Address 1 BRIDGE STREET Address 1 BRIDGE STREET
MONONGAH, WV 26554 MONONGAH, WV 26554

8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name DEREK HAUGHT Name _____
Address P.O. BOX 85 Address _____
SMITHVILLE, WV 26178

10) Work Order: The work order for the manner of plugging this well is as follows:

SEE EXHIBIT No. 1

?

MSHA 101C EXEMPTION

RECEIVED
Office of Oil and Gas

OCT 27 2020

WV Department of
Environmental Protection

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Derek M. Haught Date 10/7/2020

EXHIBIT NO.1

From the experience and technology developed since 1970 in plugging oil and gas wells for mining through, Consolidation Coal's Northern West Virginia Operations will utilize the following method to plug all future wells.

SOLID PLUG METHOD

- (a) ~~If active well:~~ clean out to total depth and plug back according to state regulations to a minimum of 200 feet below lowest minable coal seam.
- ★ (b) If abandoned well: clean out to first plug 200 feet below lowest minable coal seam.
- (c) Circulate through tubing or drill steel an expanding Class A cement plug from a minimum of 200 feet below minable coal seam to a point 100 feet above minable coal.

Circulate through tubing or drill steel an expanding Class A cement plug from 100 feet above coal seam to surface.

A monument will be installed with API No. and stating "solid plug".

RECEIVED
Office of Oil and Gas

OCT 27 2020

WV Department of
Environmental Protection

In the matter of:

Petition for Modification

The Harrison County Coal Company

Harrison County Mine

I.D. No. 46-01318

MSHA 101 C
EXEMPTION

Docket No. M-2016-019-C

DECISION AND ORDER

On May 31, 2016, a petition was filed seeking a modification of the application of 30 C.F.R. § 75.1700 to The Harrison County Coal Company's Harrison County Mine located in Marion County, West Virginia. The Petitioner filed the petition to permit an alternative method of compliance with the standard with respect to vertical to horizontal oil and gas wells into the underground coal seams. The petitioner request to amend their current Proposed Decision and Order (PDO) granted by MSHA on July 13, 2001, under Docket M-2001-015-C formerly known as Consolidation Coal Company, Robinson Run No. 95 mine to the alternate method stipulated in the April 29, 2013 PDO granted to ACI Tygart Valley, Leer Mine.

The Petitioner alleges that the proposed alternative method will at all times guarantee no less than the same measure of protection afforded miners under 30 C.F.R. § 75.1700 as that provided by the standard, which states:

§ 75.1700 Oil and gas wells.

Each operator of a coal mine shall take reasonable measures to locate oil and gas wells penetrating coalbeds or any underground area of a coal mine. When located, such operator shall establish and maintain barriers around such oil and gas wells in accordance with State laws and regulations, except that such barriers shall not be less than 300 feet in diameter, unless the Secretary or his authorized representative permits a lesser barrier consistent with the applicable State laws and regulations where such lesser barrier will be adequate to protect against hazards from such wells to the miners in such mine, or unless the Secretary or his authorized representative requires a greater barrier where the depth of the mine, other geologic conditions, or other factors warrant such a greater barrier.

The Petition addresses items for which District Manager approval is required, procedures for cleaning out and preparing oil and gas wells prior to plugging or re-plugging, procedures for plugging or re-plugging oil or gas wells to the surface, procedures for plugging or re-plugging oil or gas wells for use as degasification boreholes, alternative procedures for preparing and plugging or re-plugging oil or gas

wells, and procedures after approval has been granted to mine through a plugged or re-plugged well.

Between July 18, 2016 and August 8, 2016 MSHA personnel conducted an investigation of the petition and filed a report of their findings with the Administrator for Coal Mine Safety and Health. The modification granted under Docket No. M-2001-015-C will be superseded and replaced by this amended modification granted under Docket No. M-2016-019-C after this Proposed Amended Decision and Order becomes final.

The mine is represented by United Mine Workers of America (UMWA), AFL-CIO, CLC-1501 with miners' representatives. On July 18, 2016 a pre-investigation meeting between MSHA, the petitioner and miners was held at the Camp Run Portal at an active gas well plugging site for the mine. The meeting was to discuss the petition for modification. Approximately 27 miners on all three shifts were interviewed. An overview and general discussions were held to request feedback, concerns and questions to be presented to MSHA and miner's representatives concerning the 101(c) petition for modification.

After review of the parties' submissions and Joint Motion for Settlement, the following Decision and Order is issued.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

The Harrison County Mine employs approximately 243 miners and produces approximately 25,000 tons of bituminous coal per day from the Pittsburgh #8 coal seam with an average mine height of 76 inches. The mine is accessed through 7 exhausting air shafts and 1 slope. The mine operates 3 production shifts per day, 5 days per week, on one working section, and one longwall. The mine liberates 6,326,654 cubic feet of methane on a daily basis.

Although MSHA has granted modifications of this standard at different mines over the years, changing circumstances in oil and gas drilling technology and practices compels MSHA to reconsider the safest approach to mining around or through such wells. In recent years, changes in hydraulic fracturing (fracking) technology, marketplace and resource conditions have led to an increase in the number and depth of oil and gas wells penetrating the Pittsburgh #8 and other coal seams. Since deeper wells are usually associated with higher well pressures, modifications of § 75.1700 must include appropriate measures to better protect miners. In addition to the risks associated with higher well pressures, MSHA is concerned that operators may be preparing and plugging wells to inadequate depths for convenience or to lower costs, which may result in reduced safety for miners.

This Decision and Order reflects the settlement between the Petitioner's proposal and the amended terms and conditions first set forth by MSHA, under the terms set forth below. The major points of compromise include the following:

1. *Making a diligent effort to remove the casing to the original total depth.* If all of the casing can be removed, or if the well contains no casing, the operator shall prepare the well for plugging, and use seals described below, for wells less than 4,000' depth to seal to 200 feet below the coal seam to be mined, or the lowest mineable seam, whichever is lower, or for wells 4,000' deep or greater, seal 400 feet below the coal seam to be mined, or lowest mineable seam, whichever is lower. MSHA retains the right to review and direct the operator's sealing protocol, in the event geologic or well conditions require further measures. As used in this Proposed Amended Decision and Order, in order to make a diligent effort to remove the casing, the operator shall pull a minimum of 150% of casing string weight and/or have made at least three attempts to spear or overshot to grip the casing for the required minimum pull effort. Where casing string length is unknown, a 3,000' casing string will be assumed. The operator shall keep a record of these efforts, including casing length and weights, and make available for MSHA review. The District Manager reserves the right to require additional measures in efforts to remove casing, as appropriate.
2. *Unknown total depth.* If the total depth of the well is unknown the operator must contact the District Manager before proceeding. MSHA believes, by including this step in the process, that miner safety will be better served because the Petitioner and the District Manager can work together to evaluate the conditions of the well to be plugged as well as the safest way to accomplish the plugging. MSHA and the operator will work cooperatively to establish a communications protocol, so that the operator may contact the District Manager while working outside normal working hours.
3. *Cement.* Cement is specified to be used as a plugging material, instead of an unnamed "approved equivalent," as requested by Petitioner.
4. *Wells vary in depth.* The terms and conditions required by MSHA will require operator to prepare these wells for safe intersection by making a diligent effort to remove casing to the total depth if possible, then: cleaning to and setting a plug at least 200' below the coal seam to be mined or lowest mineable seam, whichever is lower; or for wells 4,000' or greater, to at least 400 feet below the coal seam to be mined, or lowest mineable seam, whichever is lower. The operator will then plug from either the attainable bottom or the newly installed plug, as applicable, by pumping expanding cement slurry and pressurizing to at least 200 psi. If the total depth is not reached and casing cannot be removed, these alternative methods included in this proposed decision and order have proven to be safe and effective when properly implemented.

5. *Notification* – Where the operator is required to notify the District Manager pursuant to the terms of this Proposed Decision and Order, the method of notification will be set forth in the cut-through procedures for each well. The District Manager agrees to provide a number wherein he or his designee is available at all times.

Therefore, the terms and conditions as amended will at all times guarantee no less than the same measure of protection afforded the miners under 30 C.F.R. § 75.1700 for all wells regardless of depth. On the basis of the Petition, comments received, the findings of MSHA's investigation, and the Joint Motion for Settlement by the parties, the Harrison County Coal Company is granted a modification of the application of 30 C.F.R. § 75.1700 to its Harrison County Mine.

ORDER

Under the authority delegated by the Secretary of Labor to the Administrator for Coal Mine Safety and Health, and under § 101(c) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 811(c), and 30 C.F.R. Part 44, a modification of the application of 30 C.F.R. § 75.1700 at The Harrison County Coal Company's Harrison County Mine is hereby:

GRANTED, subject to the following terms and conditions:

1. DISTRICT MANAGER APPROVAL REQUIRED

- a. The type of oil or gas well that will be considered under this Petition includes wells that have been depleted of oil or gas production or have not produced oil or gas and may have been plugged, or active conventional vertical wells which are not producing gas or oil, subject to the provisions below. Unconventional wells in the Marcellus, Utica, and all other unconventional shale oil and gas wells are not subject to this modification. Nothing in these provisions is meant to lessen, diminish, or substitute any provision found in applicable state laws or regulations.
- b. A safety barrier of 300 feet in diameter (150 feet between any mined area and a well) shall be maintained around all oil and gas wells (defined herein to include all active, inactive, abandoned, shut-in, previously plugged wells, water injection wells, and carbon dioxide sequestration wells) until approval to proceed with mining has been obtained from the District Manager. Wells that were drilled into potential oil or gas producing formations that did not produce commercial quantities of either gas or oil (exploratory wells, wildcat wells or dry holes) are classified as oil or gas wells by MSHA.

- c. Prior to mining within the safety barrier around any well that the mine plans to intersect, the mine operator shall provide to the District Manager a sworn affidavit or declaration executed by a company official, the person at the mine who is in charge of health and safety at the mine, stating that all mandatory procedures for cleaning out, preparing, and plugging each gas or oil well have been completed as described by the terms and conditions of this order.

The affidavit or declaration must be accompanied by all logs, electronic or otherwise, described in subparagraphs 2(a)(2) and 2(a)(3) below and any other records described in those subparagraphs which the District Manager may request. The District Manager will review the affidavit or declaration, the logs and any other records that have been requested, and may inspect the well itself, and will then determine if the operator has complied with the procedures for cleaning out, preparing, and plugging each well as described by the terms and conditions of this Order. If the District Manager determines that the procedures have been complied with, he will provide his approval, and the mine operator may then mine within the safety barrier of the well, subject to the terms of this Order.

If well intersection is not planned, the mine operator may request a permit to reduce the 300 foot diameter of the safety barrier that does not include intersection of the well. The District Manager may require documents and information that help verify the accuracy of the location of the well in respect to the mine maps and mining projections. This information may include survey closure data, down-hole well deviation logs, historical well intersection location data and any additional data required by the District Manager. If the District Manager determines that the proposed barrier reduction is reasonable, he will provide his approval, and the mine operator may then mine within the safety barrier of the well.

- d. The terms and conditions of this Order apply to all types of underground coal mining.

2. MANDATORY PROCEDURES FOR CLEANING OUT, PREPARING, PLUGGING, AND RE-PLUGGING OIL OR GAS WELLS

- a. **MANDATORY PROCEDURES FOR CLEANING OUT AND PREPARING VERTICAL OIL AND GAS WELLS PRIOR TO PLUGGING OR RE-PLUGGING**

The mine operator shall test for gas emissions inside the hole before cleaning out, preparing, plugging, and re-plugging oil and gas wells. The District Manager shall be contacted if the well is actively producing gas.

- (1) A diligent effort shall be made to remove all the casing in the well and clean the well to 200' below the coal seam to be mined, or the lowest mineable coal seam, whichever is lower, or for wells 4,000' or greater, clean the well to 400' below the coal seam to be mined, or the lowest mineable coal seam, whichever is lower.

If the total depth of the well is less than 4,000 feet, the operator shall completely clean out the well from the surface to at least 200 feet below the coal seam to be mined, unless the District Manager requires cleaning to a greater depth based on his judgment as to what is required due to the geological strata, or due to the pressure within the well. The operator shall provide the District Manager with all information it possesses concerning the geological nature of the strata and the pressure of the well. If the total depth of the well is 4,000 feet, or greater, the operator shall completely clean out the well from the surface to at least 400 feet below the coal seam to be mined. Wells of this greater depth are under greater pressure, so the 400 feet requirement provides greater protection for miners. The operator shall make a diligent effort to remove all material from the entire diameter of the well, wall to wall. If the total depth of the well is unknown and there is no historical information, the mine operator must contact the District Manager before proceeding.

Where active wells which are no longer producing are being cleaned and prepared subject to this order, the operator must: 1) attempt to remove all of the casing using a diligent effort, and comply with all other applicable provisions in this order, or 2) if the casing cannot be removed from the total depth, must be filled with cement from the lowest possible depth to 200 feet below the seam to be mined or lowest mineable coal seam, whichever is lower for wells less than 4,000', or 400 feet below the seam to be mined or lowest mineable coal seam, whichever is lower, for wells 4,000' or greater, and the other applicable provisions in this order still apply, or 3) if the casing cannot be removed it shall be perforated from 200 feet below the coal seam to be mined, or lowest mineable seam, whichever is lower, or 400 feet below the seam to be mined or lowest mineable coal seam, whichever is lower, for wells 4,000' or greater, and the annuli shall be cemented or otherwise filled, and the other applicable provisions in this order still apply.

- (2) The operator shall prepare down-hole logs for each well. Logs shall consist of a caliper survey, a bond log if appropriate, a deviation survey, and a gamma survey for determining the top, bottom, and thickness of all coal seams down to the coal seam to be mined, or the lowest mineable coal seam, whichever is lower, potential hydrocarbon producing strata and the

location of any existing bridge plug. In addition, a journal shall be maintained describing the depth of each material encountered; the nature of each material encountered; bit size and type used to drill each portion of the hole; length and type of each material used to plug the well; length of casing(s) removed, perforated or ripped or left in place; any sections where casing was cut or milled; and other pertinent information concerning cleaning and sealing the well. Invoices, work-orders, and other records relating to all work on the well shall be maintained as part of this journal and provided to MSHA upon request.

- (3) When cleaning out the well as provided for in subparagraph (a)(1), the operator shall make a diligent effort to remove all of the casing in the well. Thereafter, the well should be plugged to the attainable bottom, at least 200 feet below the coal seam to be mined or lowest mineable seam, whichever is lower, by pumping expanding cement slurry and pressurizing to at least 200 psi. If the casing cannot be removed, it must be cut, milled, perforated or ripped at sufficient intervals to facilitate the removal of any remaining casing in the coal seam by the mining equipment. Any casing which remains shall be perforated or ripped to permit the injection of cement into voids within and around the well. All casing remaining at the coal seam to be mined shall be perforated or ripped at least every 5 feet from 10 feet below the coal seam to 10 feet above the coal seam.

Perforations or rips are required at least every 50 feet from 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam up to 100 feet above the uppermost mineable coal seam. For perforations in the Pittsburgh Seam, see Appendix A. The mine operator must take appropriate steps to ensure that the annulus between the casing and the well walls are filled with expanding (minimum 0.5% expansion upon setting) cement and contain no voids.

Jet/sand cutting is one method for ripping or perforating casing with three or more strings of casing in the Pittsburgh coal seam in preparation for mining. This method uses compressed nitrogen gas and sand to cut the well casings as outlined in Appendix A. On active wells cuts start at 200' above the bottom of the casing at 200' intervals, to 200' below the bottom of the Pittsburgh coal seam where Appendix A outlines cut interval minimums.

If it is not possible to remove all of the casing, the operator shall notify the District Manager before any other work is performed. **If the well cannot be cleaned out or the casing removed, the operator shall prepare the well as described from the surface to at least 200 feet below the base of**

the lowest mineable coal seam for wells less than 4000 feet in depth and 400 feet below the lowest mineable coal seam for wells 4000 feet or greater, unless the District Manager requires cleaning out and removal of casing to a greater depth based on his judgement as to what is required due to geological strata, or due to the pressure within the well.

If the operator, using a casing bond log, can demonstrate to the satisfaction of the District Manager that all annuli in the well are already adequately sealed with cement, then the operator will not be required to perforate or rip the casing for that particular well. When multiple casing and tubing strings are present in the coal horizon(s), any casing which remains shall be ripped or perforated and filled with expanding cement as indicated above. An acceptable casing bond log for each casing and tubing string is needed if used in lieu of ripping or perforating multiple strings.

- (4) If the District Manager concludes that the completely cleaned-out well is emitting excessive amounts of gas, the operator must place a mechanical bridge plug in the well.

It must be placed in a competent stratum at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam, but above the top of the uppermost hydrocarbon-producing stratum, unless the District Manager requires a greater distance based on his judgment that it is required due to the geological strata, or due to the pressure within the well. The operator shall provide the District Manager with all information it possesses concerning the geological nature of the strata and the pressure of the well. If it is not possible to set a mechanical bridge plug, an appropriately sized packer may be used. The mine operator shall document what has been done to "kill the well" and plug the hydrocarbon producing strata.

- (5) If the upper-most hydrocarbon-producing stratum is within 300 feet of the base of the coal seam to be mined, or lowest mineable seam, whichever is lower, the operator shall properly place mechanical bridge plugs as described in subparagraph (a)(4) to isolate the hydrocarbon-producing stratum from the expanding cement plug.

Nevertheless, the operator shall place a minimum of 200 feet (400 feet if the total well depth is 4,000 feet or greater) of expanding cement below the coal seam to be mined, or lowest mineable seam, whichever is lower, unless the District Manager requires a greater distance based on his judgment that it is required due to the geological strata, or due to the pressure within the well.

b. MANDATORY PROCEDURES FOR PLUGGING OR RE-PLUGGING OIL OR GAS WELLS TO THE SURFACE

After completely cleaning out the well as specified in paragraph 2(a) above, the following procedures shall be used to plug or re-plug wells:

- (1) **The operator shall pump expanding cement slurry down the well to form a plug which runs from at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the coal seam to be mined, or lowest mineable seam, whichever is lower, (or lower if required by the District Manager based on his judgment that a lower depth is required due to the geological strata, or due to the pressure within the well) to the surface.** The expanding cement will be placed in the well under a pressure of at least 200 pounds per square inch. Portland cement or a lightweight cement mixture may be used to fill the area from 100 feet above the top of the uppermost mineable coal seam (or higher if required by the District Manager based on his judgment that a higher distance is required due to the geological strata, or due to the pressure within the well) to the surface.
- (2) The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4-inch or larger diameter casing, set in cement, shall extend at least 36 inches above the ground level with the API well number engraved or welded on the casing. When the hole cannot be marked with a physical monument (e.g. prime farmland), high-resolution GPS coordinates (one-half meter resolution) are required.

c. MANDATORY PROCEDURES FOR PLUGGING OR RE-PLUGGING OIL AND GAS WELLS FOR USE AS DEGASIFICATION WELLS

After completely cleaning out the well as specified in paragraph 2(a) above, the following procedures shall be utilized when plugging or re-plugging wells that are to be used as degasification wells:

- (1) **The operator shall set a cement plug in the well by pumping an expanding cement slurry down the tubing to provide at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) of expanding cement below the coal seam to be mined, or lowest mineable seam, whichever is lower, unless the District Manager requires a greater depth based on his judgment that a greater depth is required due to the geological strata, or due to the pressure within the well.** The expanding cement will be placed in the well under a pressure of at least 200 pounds per square inch. The top of the expanding cement shall extend at least 50

feet above the top of the coal seam being mined, unless the District Manager requires a greater distance based on his judgment that a greater distance is required due to the geological strata, or due to the pressure within the well.

- (2) The operator shall securely grout into the bedrock of the upper portion of the degasification well a suitable casing in order to protect it. The remainder of this well may be cased or uncased.
- (3) The operator shall fit the top of the degasification casing with a wellhead equipped as required by the District Manager in the approved ventilation plan. Such equipment may include check valves, shut-in valves, sampling ports, flame arrestor equipment, and security fencing.
- (4) Operation of the degasification well shall be addressed in the approved ventilation plan. This may include periodic tests of methane levels and limits on the minimum methane concentrations that may be extracted.
- (5) After the area of the coal mine that is degassed by a well is sealed or the coal mine is abandoned, the operator must plug all degasification wells using the following procedures:
 - (i) The operator shall insert a tube to the bottom of the well or, if not possible, to within 100 feet above the coal seam being mined. Any blockage must be removed to ensure that the tube can be inserted to this depth.
 - (ii) The operator shall set a cement plug in the well by pumping Portland cement or a lightweight cement mixture down the tubing until the well is filled to the surface.
 - (iii) The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level with the API well number engraved or welded on the casing.
 - (iv) This provision does not apply to traditional degasification holes which have not intersected the seam to be mined, have not commercially produced gas and have no API number.

d. MANDATORY ALTERNATIVE PROCEDURES FOR PREPARING AND PLUGGING OR RE-PLUGGING OIL OR GAS WELLS

The following provisions apply to all wells which the operator determines, and with which the MSHA District Manager agrees, cannot be completely cleaned out due to damage to the well caused by subsidence, caving, or other factors.

- (1) **The operator shall drill a hole adjacent and parallel to the well, to a depth of at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the coal seam to be mined, or lowest mineable seam, whichever is lower, unless the District Manager requires a greater depth based on his judgment that a greater depth is required due to the geological strata, or due to the pressure within the well.**
- (2) The operator shall use a geophysical sensing device to locate any casing which may remain in the well.
- (3) If the well contains casing(s), the operator shall drill into the well from the parallel hole. From 10 feet below the coal seam to 10 feet above the coal seam, the operator shall perforate or rip all casings at least every 5 feet. **Beyond this distance, the operator shall perforate or rip at least every 50 feet from at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the coal seam to be mined, or lowest mineable seam, whichever is lower, up to 100 feet above the seam being mined, unless the District Manager requires a greater distance based on his judgment that a greater distance is required due to the geological strata, or due to the pressure within the well.** The diagram shown in Appendix A is representative of the locations of the perforations or ripping that must be done.

The operator shall fill the annulus between the casings and between the casings and the well wall with expanding (minimum 0.5% expansion upon setting) cement, and shall ensure that these areas contain no voids. If the operator, using a casing bond log, can demonstrate to the satisfaction of the District Manager that the annulus of the well is adequately sealed with cement, then the operator will not be required to perforate or rip the casing for that particular well, or fill these areas with cement. When multiple casing and tubing strings are present in the coal horizon(s), any casing which remains shall be ripped or perforated and filled with expanding cement as indicated above. An acceptable casing bond log for each casing and tubing string is needed if used in lieu of ripping or perforating multiple strings.

- (4) Where the operator determines, and the District Manager agrees, that

there is insufficient casing in the well to allow the method outlined in subparagraph (d)(3) to be used, then the operator shall use a horizontal hydraulic fracturing technique to intercept the original well. **From at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the coal seam to be mined, or lowest mineable seam, whichever is lower, to a point at least 50 feet above the seam being mined, the operator shall fracture in at least six places at intervals to be agreed upon by the operator and the District Manager after considering the geological strata and the pressure within the well.** The operator shall then pump expanding cement into the fractured well in sufficient quantities and in a manner which fills all intercepted voids.

- (5) The operator shall prepare down-hole logs for each well. Logs shall consist of a caliper survey, a bond log if applicable, a deviation survey, and a gamma log for determining the top, bottom, and thickness of all coal seams down to the coal seam to be mined, **or lowest mineable seam, whichever is lower,** potential hydrocarbon producing strata and the location of any existing bridge plug. The operator may obtain the logs from the adjacent hole rather than the well if the condition of the well makes it impractical to insert the equipment necessary to obtain the log.
- (6) A journal shall be maintained describing the depth of each material encountered; the nature of each material encountered; bit size and type used to drill each portion of the hole; length and type of each material used to plug the well; length of casing(s) removed, perforated or ripped or left in place; any sections where casing was cut or milled; and other pertinent information concerning sealing the well. Invoices, work-orders, and other records relating to all work on the well shall be maintained as part of this journal and provided to MSHA upon request.
- (7) After the operator has plugged the well as described in subparagraphs (d)(3) and/or (d)(4), the operator shall plug the adjacent hole, from the bottom to the surface, with Portland cement or a lightweight cement mixture.

The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level.

A combination of the methods outlined in subparagraphs (d)(3) and (d)(4) may have to be used in a single well, depending upon the conditions of the hole and the presence of casings. The operator and the District Manager shall discuss the nature of each hole. The District Manager may

require that more than one method be utilized. The mine operator may submit an alternative plan to the District Manager for approval to use different methods to address wells that cannot be completely cleaned out. The District Manager may require additional documentation and certification by a registered petroleum engineer to support the proposed alternative methods.

3. MANDATORY PROCEDURES WHEN MINING WITHIN A 100-FOOT DIAMETER BARRIER AROUND WELL

- a. A representative of the operator, a representative of the miners, the appropriate State agency, or the MSHA District Manager may request that a conference be conducted prior to intersecting any plugged or re-plugged well. Upon receipt of any such request, the District Manager shall schedule such a conference. The party requesting the conference shall notify all other parties listed above within a reasonable time prior to the conference to provide opportunity for participation. The purpose of the conference shall be to review, evaluate, and accommodate any abnormal or unusual circumstance related to the condition of the well or surrounding strata when such conditions are encountered.
- b. The operator shall intersect a well on a shift approved by the District Manager. The operator shall notify the District Manager and the miners' representative in sufficient time prior to intersecting a well in order to provide an opportunity to have representatives present.
- c. When using continuous mining methods, the operator shall install drivage sights at the last open crosscut near the place to be mined to ensure intersection of the well. The drivage sites shall not be more than 50 feet from the well. When using longwall-mining methods, distance markers shall be installed on 5-foot centers for a distance of 50 feet in advance of the well in the headgate entry and in the tailgate entry.
- d. The operator shall ensure that fire-fighting equipment including fire extinguishers, rock dust, and sufficient fire hose to reach the working face area of the well intersection (when either the conventional or continuous mining method is used) is available and operable during all well intersections. The fire hose shall be located in the last open crosscut of the entry or room. The operator shall maintain the water line to the belt conveyor tailpiece along with a sufficient amount of fire hose to reach the farthest point of penetration on the section. When the longwall mining method is used, a hose to the longwall water supply is sufficient.

- e. The operator shall ensure that sufficient supplies of roof support and ventilation materials shall be available and located at the last open crosscut. In addition, emergency plugs and suitable sealing materials shall be available in the immediate area of the well intersection.
- f. On the shift prior to intersecting the well, the operator shall service all equipment and check it for permissibility. Water sprays, water pressures, and water flow rates used for dust and spark suppression shall be examined and any deficiencies corrected.
- g. The operator shall calibrate the methane monitor(s) on the longwall, continuous mining machine, or cutting machine and loading machine on the shift prior to intersecting the well.
- h. When mining is in progress, the operator shall perform tests for methane with a handheld methane detector at least every 10 minutes from the time that mining with the continuous mining machine or longwall face is within 30 feet of the well until the well is intersected. During the actual cutting process, no individual shall be allowed on the return side until the well intersection has been completed, and the area has been examined and declared safe. All workplace examinations on the return side of the shearer will be conducted while the shearer is idle. The operator's most current Approved Ventilation Plan will be followed at all times unless the District Manager deems a greater air velocity for the intersect is necessary.
- i. When using continuous or conventional mining methods, the working place shall be free from accumulations of coal dust and coal spillages, and rock dust shall be placed on the roof, rib, and floor to within 20 feet of the face when intersecting the well. On longwall sections, rock dusting shall be conducted and placed on the roof, rib, and floor up to both the headgate and tailgate gob.
- j. When the well is intersected, the operator shall de-energize all equipment, and thoroughly examine and determine the area to be safe before permitting mining to resume.
- k. After a well has been intersected and the working place determined to be safe, mining shall continue inby the well a sufficient distance to permit adequate ventilation around the area of the well.
- l. If the casing is cut or milled at the coal seam level, the use of torches should not be necessary. However, in rare instances, torches may be used for inadequately or inaccurately cut or milled casings. No open flame shall be permitted in the area until adequate ventilation has been

established around the well bore and methane levels of less than 1.0% are present in all areas that will be exposed to flames and sparks from the torch. The operator shall apply a thick layer of rock dust to the roof, face, floor, ribs and any exposed coal within 20 feet of the casing prior to the use of torches.

- m. Non-sparking (brass) tools will be available and will be used exclusively to expose and examine cased wells.
- n. No person shall be permitted in the area of the well intersection except those actually engaged in the operation, including company personnel, representatives of the miners, personnel from MSHA, and personnel from the appropriate State agency.
- o. The operator shall alert all personnel in the mine to the planned intersection of the well prior to their going underground if the planned intersection is to occur during their shift. This warning shall be repeated for all shifts until the well has been mined through.
- p. The well intersection shall be under the direct supervision of a certified individual. Instructions concerning the well intersection shall be issued only by the certified individual in charge.
- q. If the mine operator cannot find the well in the longwall panel or if a development section misses the anticipated intersection, the operator shall cease mining to examine for hazardous conditions at the projected location of the well, notify the District Manager, and take reasonable measures to locate the well, including visual observation/inspection or through survey data. Mining may resume if the well is located and no hazardous conditions exist. If the well cannot be located, the mine operator shall work with District Manager to resolve any issues before mining resumes.
- r. The provisions of this Order do not impair the authority of representatives of MSHA to interrupt or halt the well intersection, and to issue a withdrawal order, when they deem it necessary for the safety of the miners. MSHA may order an interruption or cessation of the well intersection and/or a withdrawal of personnel by issuing either a verbal or written order to that effect to a representative of the operator, which order shall include the basis for the order. Operations in the affected area of the mine may not resume until a representative of MSHA permits resumption. The mine operator and miners shall comply with verbal or

written MSHA orders immediately. All verbal orders shall be committed to writing within a reasonable time as conditions permit.

- s. A copy of this Order shall be maintained at the mine and be available to the miners.
- t. If the well is not plugged to the total depth of all minable coal seams identified in the core hole logs, any coal seams beneath the lowest plug will remain subject to the barrier requirements of 30 C.F.R. § 75.1700, should those coal seams be developed in the future.
- u. All necessary safety precautions and safe practices according to Industry Standards, required by MSHA regulations and State regulatory agencies having jurisdiction over the plugging site will be followed to provide the upmost protection to the miners involved in the process.
- v. All miners involved in the plugging or re-plugging operations will be trained on the contents of this Petition prior to starting the process and a copy of this Petition will be posted at the well site until the plugging or re-plugging has been completed.
- w. Mechanical bridge plugs should incorporate the best available technologies that are either required or recognized by the State regulatory agency and/or oil and gas industry.
- x. Within 30 days after this Order becomes final, the operator shall submit proposed revisions for its approved 30 C.F.R. Part 48 training plan to the District Manager. These proposed revisions shall include initial and refresher training on compliance with the terms and conditions stated in the Order. The operator shall provide all miners involved in well intersection with training on the requirements of this Order prior to mining within 150 feet of the next well intended to be mined through.
- y. The responsible person required under 30 C.F.R. § 75.1501 Emergency Evacuations, is responsible for well intersection emergencies. The well intersection procedures should be reviewed by the responsible person prior to any planned intersection.
- z. Within 30 days after this Order becomes final, the operator shall submit proposed revisions for its approved mine emergency evacuation and firefighting program of instruction required under 30 C.F.R § 75.1502. The operator will revise the program of instruction to include the hazards and evacuation procedures to be used for well intersections. All

underground miners will be trained in this revised plan within 30 days of submittal.

SUBJECT TO THE ABOVE TERMS AND CONDITIONS, and under the authority delegated by the Secretary of Labor to the Administrator for Coal Mine Safety and Health, and under § 101(c) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 811(c), and 30 C.F.R. Part 44, a modification of the application of 30 C.F.R. § 75.1700 at The Harrison County Coal Company's Harrison County Mine is hereby **GRANTED**.

DISTRIBUTION

*Winfield Wilson
Office of the Solicitor, U.S. Dept. of Labor
201 12th St S, Suite 401
Arlington, VA 22202*

*Christopher D. Pence
Hardy Pence PLLC
500 Lee Street East, Suite 701
Charleston, WV 25301*

*Stephen Gigliotti
Coal Mine Safety & Health, Safety Division
Mine Safety and Health Administration, U.S. Dept. of Labor
201 12th St S, Suite 401
Arlington, VA 22202*

*Sheila McConnell
Office of Standards Regulations and Variances
Mine Safety and Health Administration, U.S. Dept. of Labor
201 12th St S, Suite 401
Arlington, VA 22202*

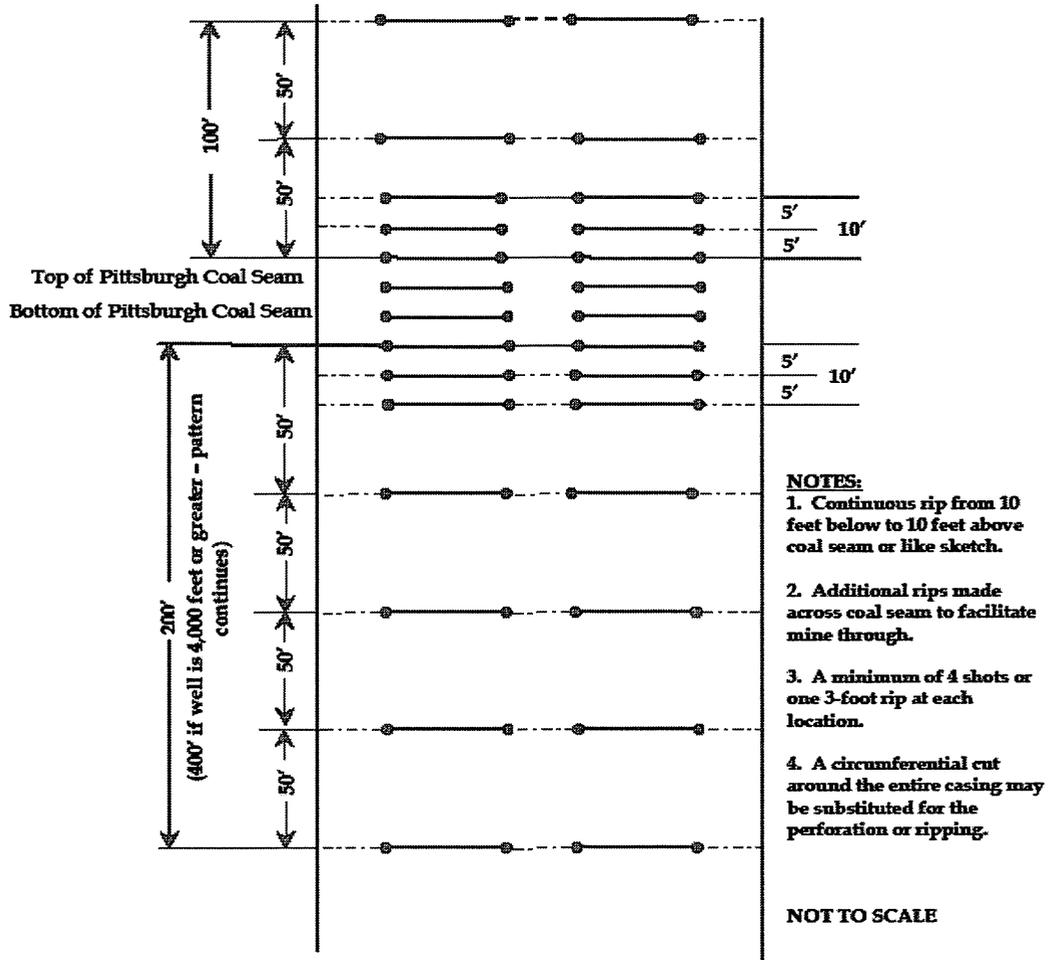
*David Roddy
Harrison County Coal Company
1 Bridge Street
Monongah, WV 26554*

*Greg J. Norman, Director
West Virginia Office of Miners' Health Safety & Training
#7 Players Club Dr. Suite 2
Charleston WV 25311*

*Todd Toothman
UMWA Representative, Harrison County Coal Mine
53 Casey Lane
Metz, West Virginia 26585*

*David Hollis
UMWA Representative, Harrison County Coal Mine
P. O. Box 362
Pursglove, WV 26546*

Appendix A



WW-4A
Revised 6-07

1) Date: OCTOBER 1, 2020

2) Operator's Well Number 7274B

3) API Well No.: 47 - 103

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>COASTAL FOREST RESOURCES COMPANY</u>	Name <u>CONSOLIDATION COAL CO.</u>
Address <u>P.O. BOX 709</u>	Address <u>1 BRIDGE STREET</u>
<u>BUCKHANNON, WV 26201</u>	<u>MONONGAH, WV 26554</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>DEREK HAUGHT</u>	(c) Coal Lessee with Declaration
Address <u>P.O. BOX 85</u>	Name _____
<u>SMITHVILLE, WV 26178</u>	Address _____
Telephone <u>(304) 206-7613</u>	

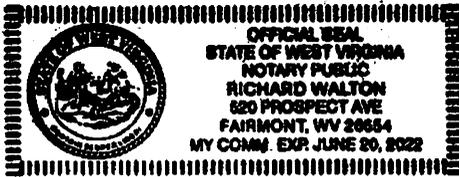
TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverse side however, you are not required to take any action at all

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator	<u>CONSOLIDATION COAL COMPANY</u>	<i>[Signature]</i>
By:	<u>DAVID RODDY</u>	
Its:	<u>PROJECT ENGINEER</u>	RECEIVED
Address	<u>1 BRIDGE STREET</u>	Office of Oil and Gas
	<u>MONONGAH, WV 26554</u>	
Telephone	<u>(304) 534-4748</u>	OCT 27 2020



Subscribed and sworn before me this 1st day of October 2020
[Signature] Notary Public
 WV Department of Environmental Protection
 My Commission Expires June 30, 2022

Oil and Gas Privacy Notice

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

4710303864P

U.S. Postal Service
CERTIFIED MAIL® RECEIPT
 Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee \$ _____

Extra Services & Fees (check box, add fee as appropriate)

Return Receipt (hardcopy) \$ _____

Return Receipt (electronic) \$ _____

Certified Mail Restricted Delivery \$ _____

Adult Signature Required \$ _____

Adult Signature Restricted Delivery \$ _____

Postage \$ _____

Total Postage and Fees \$ _____

Sent To Coastal Forest Resources

Street and Apt. No., or PO Box No. P.O. Box 709

City, State, ZIP+4® Buckhannon, WV 26001

PS Form 3800, April 2015 PSN 7530-02-000-0047 See Reverse for Instructions

7018 390 000 5308 3748
 842E 20E5 1000 060E 8102

MONONGAHELI COUNTY, WV
 OCT 27 2020
 Postmark
 Peter

D. R. ...

✓

RECEIVED
Office of Oil and Gas
OCT 27 2020

WV Department of
Environmental Protection

WW-9
(5/16)

API Number 47 - 103 -
Operator's Well No. 7274B

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Consolidation Coal Company OP Code 10950

Watershed (HUC 10) PRICE RUN OF SOUTH FORK FISHING CREEK Quadrangle FOLSOM W.VA

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: _____

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Tanks, see attached letter)

DMH 10/7/20

Will closed loop system be used? If so, describe: Yes. Gel circulated from tank thru well bore and returned to tank

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

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

Additives to be used in drilling medium? Bentonite, Bicarbonate of Soda

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Shaker cutting buried on site.

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

-Landfill or offsite name/permit number? N/A

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.

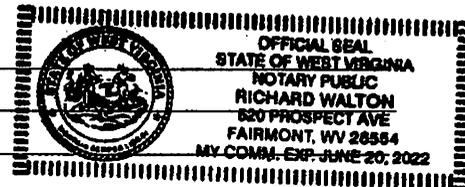
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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 *David Roddy*

Company Official (Typed Name) David Roddy

Company Official Title Project Engineer



Subscribed and sworn before me this 2nd day of October, 2020

[Signature]

Notary Public

RECEIVED
Office of Oil and Gas

OCT 27 2020

My commission expires June 20, 2022

47103033649

Consolidation Coal Company
Northern West Virginia Operations
1 Bridge Street
Monongah, WV 26554

phone: 304-534-4748
fax: 304-534-4739
e-mail: ronnieharsh@consolenergy.com
web: www.coalsource.com

*Name: RONNIE HARSH
*title: Project Engineer

April. 7, 2014

Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304-2345
Phone: (304) 926-0499
Fax: (304) 926-0452

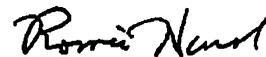
To Whom It May Concern:

As per the Department of Environmental Protection, Office of Oil and Gas request, Consolidation Coal Company, Northern West Virginia Operations, submits the following procedures utilizing pit waste.

Upon submitting a well work application (without general permit for Oil and Gas Pit Waste Discharge Application), Consolidation Coal Company, Northern West Virginia Operations, will construct no pits, but instead will use mud tanks to contain all drilling muds.

Once the well is completed, that material (minus the cave material) will be trucked to the next well to be plugged or to DEP impoundment facilities number U-78-83, U-104-83, or U-1011-93.

Sincerely,



Ronnie Harsh
Project Engineer

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Office of Oil and Gas

OCT 27 2020

WV Department of
Environmental Protection

Form WW-9

Operator's Well No. 7274 B

Proposed Revegetation Treatment: Acres Disturbed 1 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.0

Fertilizer type 10-20-20 or equivalent

Fertilizer amount 500 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
See Attachment	<u>100</u>
_____	_____
_____	_____

Seed Type	lbs/acre
See Attachment	<u>100</u>
_____	_____
_____	_____

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, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Derek M. Haught

Comments: _____

Title: Oil & Gas Inspector

Date: 10/7/2020

Field Reviewed? Yes No

RECEIVED
Office of Oil and Gas

OCT 27 2020

WV Department of
Environmental Protection

CAUDILL SEED * 1064 E MAIN HWY 60 HOUSE #2 * MOREHEAD KY 40351 * RMS # 4923



NOTICE TO CONSUMERS

Notice: Arbitration/mediation/meditation required by several states. Under the seed laws of several states, arbitration, mediation, or conciliation is required as a prerequisite to maintaining a legal action based upon the failure of seed, to which this notice is attached, to produce as represented. The consumer shall file a complaint (except for AR, FL, IN, MS, SC, TX, WA, signed only CA, ID, ND, SD) along with the required filing fee (where applicable) with the Commissioner/Director/Secretary of Agriculture, Seed Commissioner (PA), or Chief Agricultural Officer within such time as to permit inspection of the crops, plants, or trees by the designated agency and the seedsmen from whom the seed was purchased. A copy of the complaint shall be sent to the seller by certified or registered mail or as otherwise provided by state statute.

MIXTURE-COASTAL SEED 2015

LOT NO: 7H1000 NET WT 50
CROP: .58 INERT: 1.56 WEED SEED .26

KIND
ANNUAL RYEGRASS
ORCHARDGRASS
COATING MATERIAL
PERENNIAL RYEGRASS
CLOVER
COATING MATERIAL
TIMOTHY
BIRDSFOOT TREFOIL
COATING MATERIAL
LADINO CLOVER
COATING MATERIAL

VARIETY
MAGNUM
POTOMAC

LINN
NOT STATED

CLIMAX
NOT STATED

SEMINOLE

ORG	PURE	GERM	HARD	DORM	TEST
OR	29.40	90.00	.00	.00	10/16
OR	11.35	85.00	.00	.00	11/16
OR	8.00	85.00	.00	.00	11/16
OR	19.60	85.00	.00	.00	12/16
OR	5.40	85.00	.00	.00	11/16
OR	3.40	85.00	.00	.00	11/16
CAN	9.00	85.00	.00	.00	10/16
CAN	2.80	83.00	7.00	.00	11/16
OR	1.91	85.00	.00	.00	8/16
OR	3.17	60.00	25.00	.00	8/16
	1.70	.00	.00	.00	8/16

NOTICE TO BUYER: WE WARRANT THAT SEEDS WE SELL WILL CONFORM TO THE LABEL DESCRIPTION REQUIRED UNDER STATE AND FEDERAL LAWS, WITHIN RECOGNIZED TOLERANCES. WE MAKE NO WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHERWISE, WHICH WOULD EXTEND BEYOND SUCH DESCRIPTIONS, AND IN ANY EVENT OUR LIABILITY FOR BREACH OF ANY WARRANTY OR CONTRACT WITH RESPECT TO SUCH SEED IS LIMITED TO THE PURCHASE PRICE OF SUCH SEEDS.

Memo
Treatments

NOXIOUS WEEDS PER LB

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WV Department of
Environmental Protection

WW-9- GPP
Rev. 5/16

N/A

Page 1 of 2
API Number 47 - 103 -
Operator's Well No. 7274 B

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

Operator Name: CONSOLIDATION COAL COMPANY
Watershed (HUC 10): PRICE RUN OF SOUTH FORK FISHING CREEK Quad: FOLSOM W.VA
Farm Name: _____

- 1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

[Empty response box for question 1]

- 2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

[Empty response box for question 2]

- 3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

[Empty response box for question 3]

- 4. Summarize all activities at your facility that are already regulated for groundwater protection.

[Empty response box for question 4]

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- 5. Discuss any existing groundwater quality data for your facility or an adjacent property.

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N/A

[Empty rectangular box for response]

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

[Empty rectangular box for response]

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

[Empty rectangular box for response]

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

[Empty rectangular box for response]

Signature: _____

Date: _____

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Gas
Well# 7274B
FOLSOM WV 7.5' Quad
Scale: 1" = 500'

JEEP



TRAIL

1300

1000

Well# 7274B

1300

1500

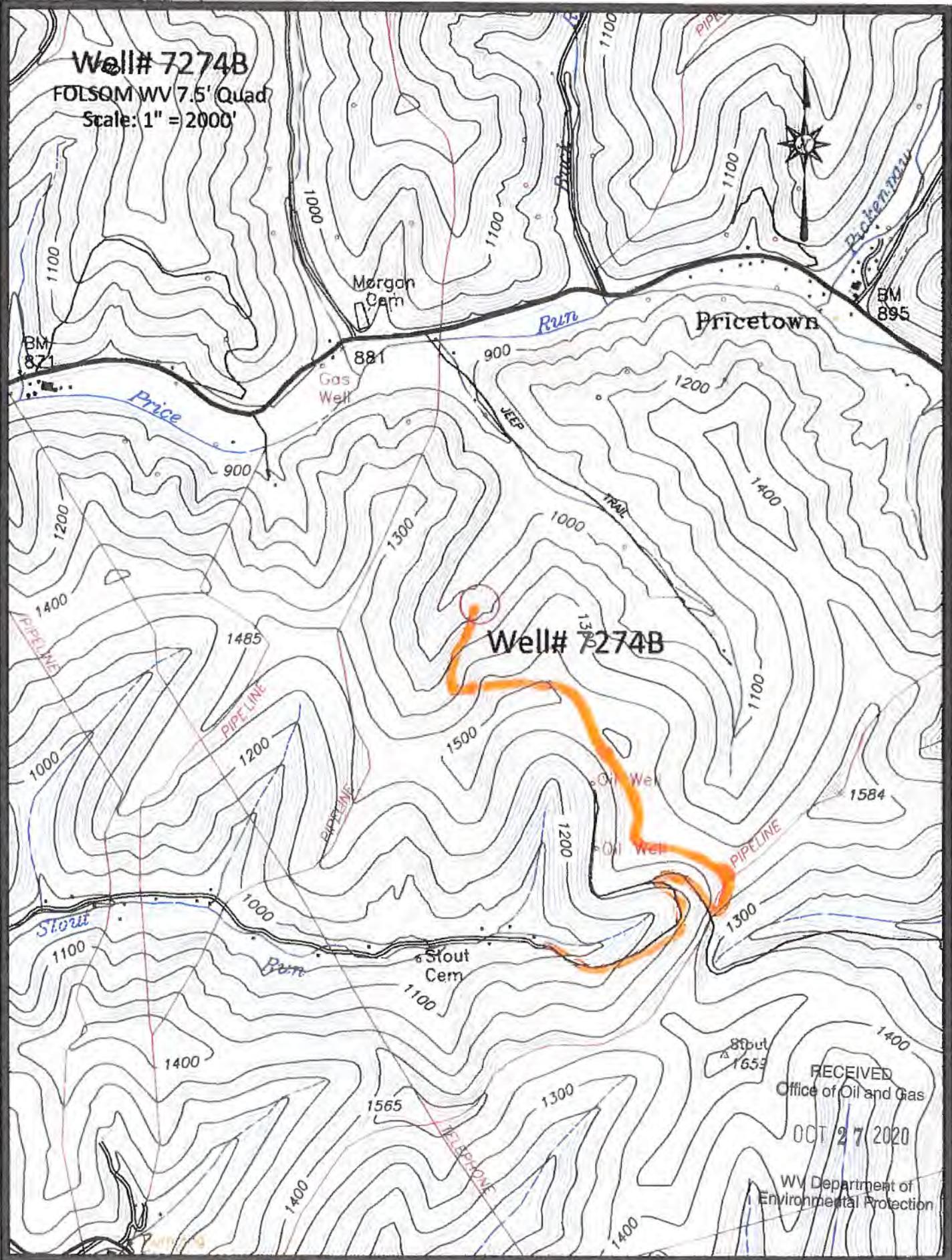
PIPELINE

1200

Oil Well

Oil Well

Well# 7274B
FOLSOM WV 7.5' Quad
Scale: 1" = 2000'



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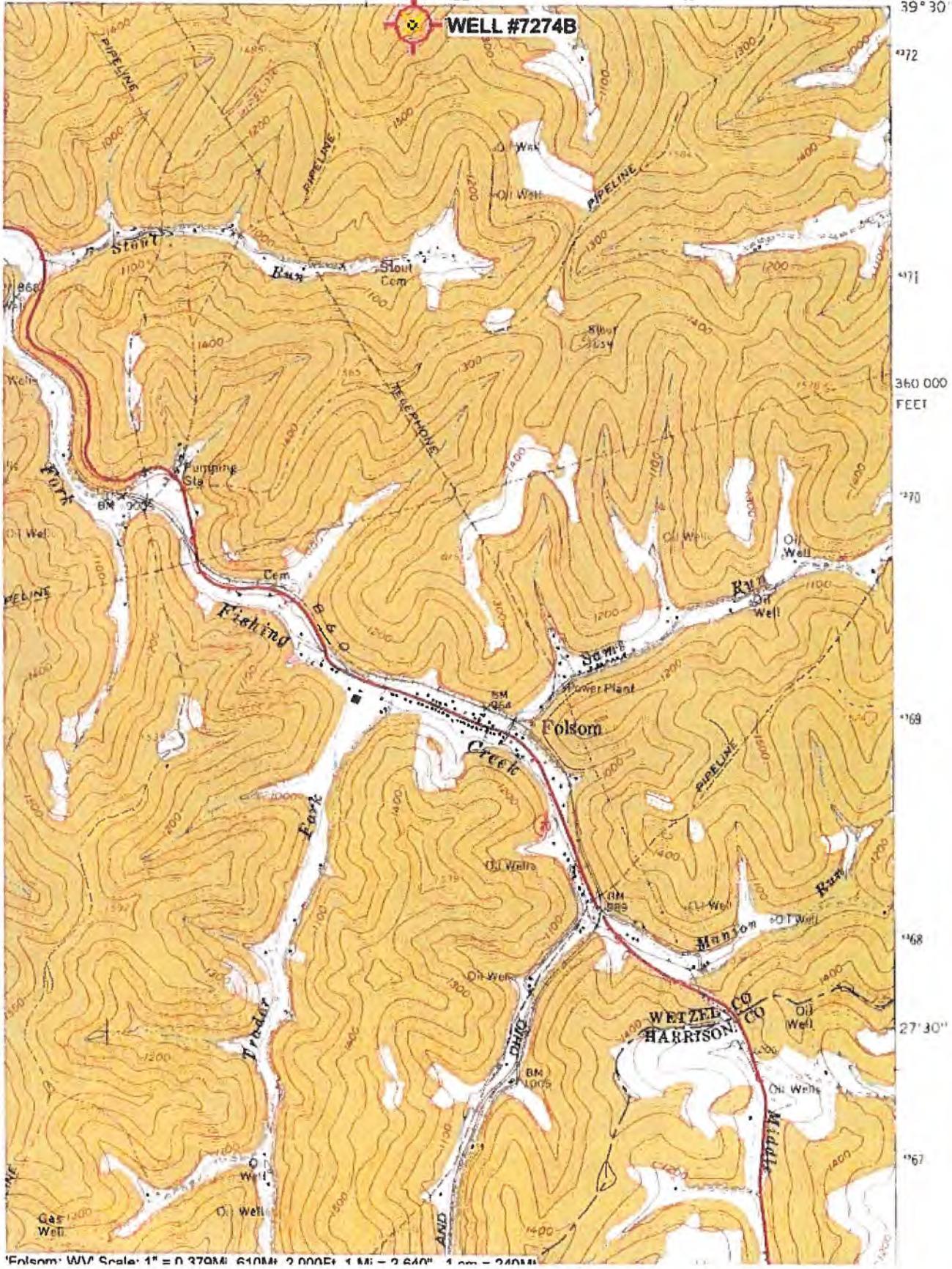
WV Department of
Environmental Protection

4710303364P

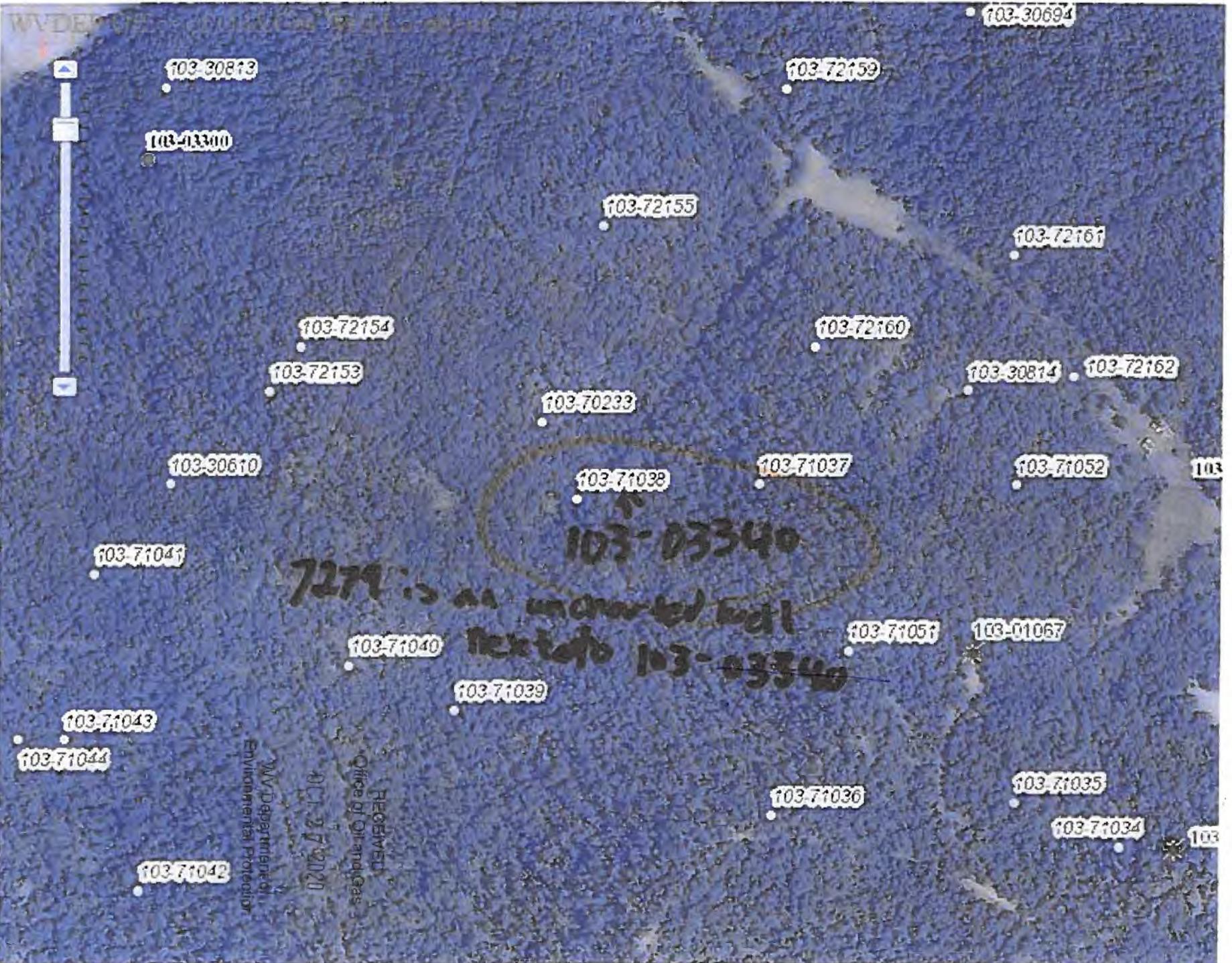
FOLSOM QUADRANGLE
WEST VIRGINIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 CENTER POINT 15' QUADRANGLE

J883 III SW
(GLOVER GAP)

339 32'30" 740 1 710 000 FEET 742 80°30' 39'30"



Folsom, WV Scale: 1" = 0.370Mi 610M 2,000Ft 1 Mi = 2,640' 1 km = 2,400M



103-30694

103-30813

103-72159

103-43300

103-72155

103-72161

103-72154

103-72160

103-72153

103-70293

103-30814

103-72162

103-30610

103-71038

103-71037

103-71052

103-71041

103-03340

7279 is an unmarked well
next to 103-03340

103-71040

103-71051

103-01067

103-71039

103-71043

103-71036

103-71035

103-71044

103-71034

103-71042

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4710303364 P

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-103- WELL NO.: 7274B

FARM NAME: B. W. PETERSON

RESPONSIBLE PARTY NAME: CONSOLIDATION COAL COMPANY

COUNTY: WETZEL DISTRICT: GRANT

QUADRANGLE: FOLSOM W.VA

SURFACE OWNER: COASTAL FOREST RESOURCES COMPANY

ROYALTY OWNER: _____

UTM GPS NORTHING: 4,372,292 m (1086')

UTM GPS EASTING: 540,839 m GPS ELEVATION: 331 m

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) - meters.
2. Accuracy to Datum - 3.05 meters
3. Data Collection Method:

Survey grade GPS : Post Processed Differential _____
Real-Time Differential

Mapping Grade GPS _____ : Post Processed Differential _____
Real-Time Differential _____

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Professional Surveyor
Title

OCTOBER 1, 2020
Date