



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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Thursday, July 13, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for HATTIE UNIT 3H
47-017-06837-00-00

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: HATTIE UNIT 3H
Farm Name: STANLEY WEBB ET AL
U.S. WELL NUMBER: 47-017-06837-00-00
Horizontal 6A / New Drill
Date Issued: 7/13/2017

Promoting a healthy environment.

07/14/2017

PERMIT CONDITIONS

API 047-017-06837

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.

07/14/2017

PERMIT CONDITIONS

API 047-017-06837

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.

WW-6B
(04/15)

API NO. 47-017 - _____
 OPERATOR WELL NO. Hattie Unit 3H
 Well Pad Name: Stanley Pad

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

1) Well Operator: Antero Resources Corporation 494507062 017 - Doddri Central Pullman 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Hattie Unit 3H Well Pad Name: Stanley Pad

3) Farm Name/Surface Owner: Stanley Webb et al Public Road Access: Cabin Run Rd (CR 21/1)

4) Elevation, current ground: 1095' Elevation, proposed post-construction: 1095'

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: 6800' TVD, Anticipated Thickness- 50 feet, Associated Pressure- 3000#

8) Proposed Total Vertical Depth: 6800' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18800' MD

11) Proposed Horizontal Leg Length: 11437'

12) Approximate Fresh Water Strata Depths: 168', 322', 433'

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

14) Approximate Saltwater Depths: 660', 1083', 2090'

15) Approximate Coal Seam Depths: 170', 877'

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

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

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

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DAF
4/12/17

APR 14 2017

WW-6B
(04/15)

API NO. 47- 017 - _____
OPERATOR WELL NO. Hattie Unit 3H
Well Pad Name: Stanley Pad

APR 14 2017

18)

GASING 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, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	485' *see #19	485' *see #19	CTS, 674 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	18800'	18800'	4762 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	^{20"} 30"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	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"	0.361"	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			

DAF
4/12/17

WW-6B
(10/14)

API NO. 47- 017 - _____
OPERATOR WELL NO. Hattie Unit 3H
Well Pad Name: Stanley Pad

APR 14 2017

WV Department of
Environmental Protection

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

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

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

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

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 43.30 Acres

22) Area to be disturbed for well pad only, less access road (acres): 9.00 Acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

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

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

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

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

Conductor: no additives, Class A cement.

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

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

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

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

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

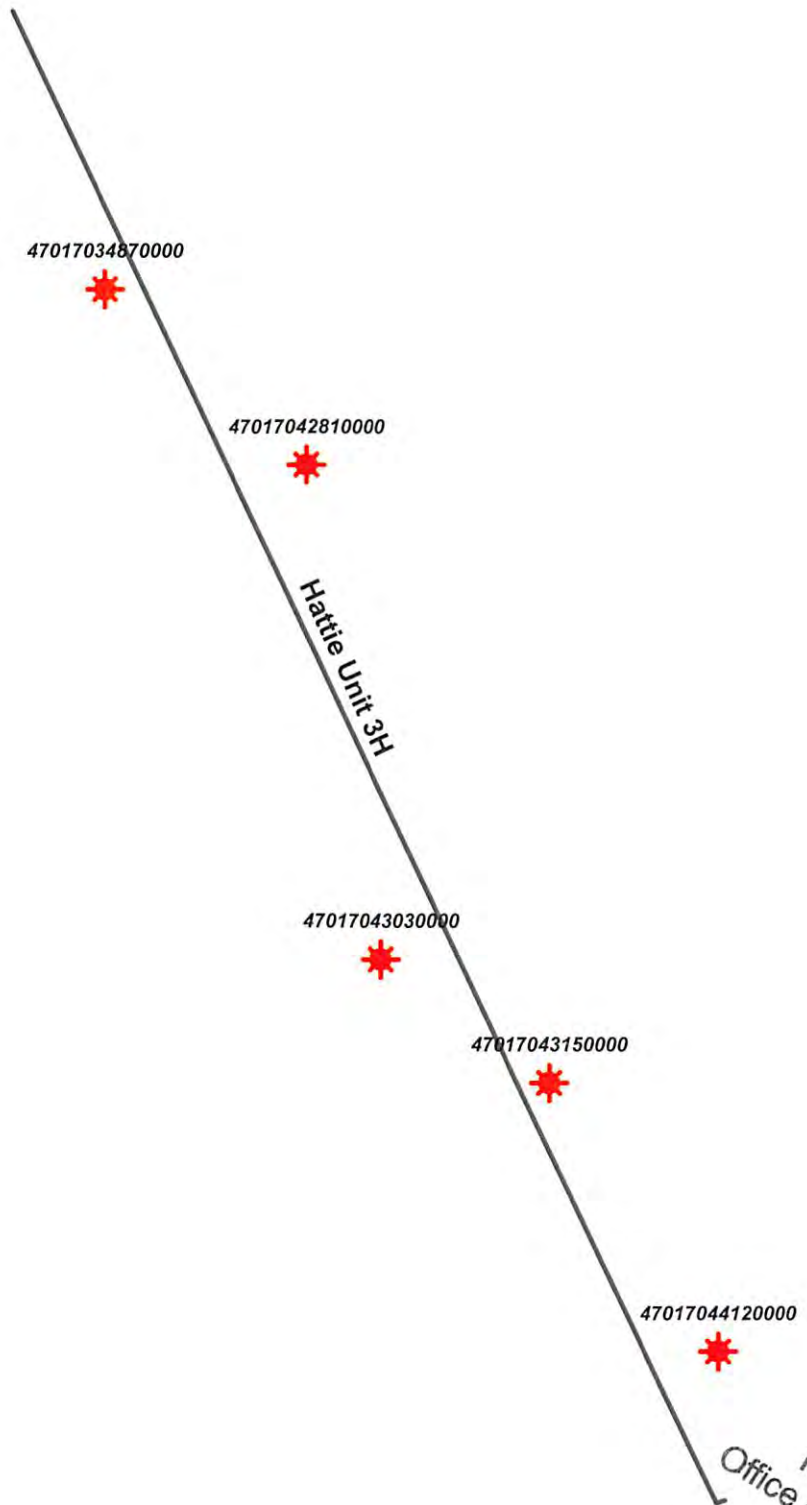
Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

DAE
4/12/17



API 047-017-06837



Hattie Unit 3H - AOR



WELL SYMBOLS
Gas Well

March 29, 2017

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APR 11 2017
WV Department of
Environmental Protection
07/14/2017

HATTIE UNIT 3H (STANLEY PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

UWI (API#)	Well Name	Well Number	Operator	Historical Operator	TD (ELEV GR)	Approx distance to well	TD (STVD)	Perforated Interval (shallowest, deepest)	Perforated Formations(s)	Producing Formations(s) not perf'd
4701704303000	DOTSON HATTIE O HEIRS	1	KEY OIL COMPANY	KEY OIL INCORPORATED	5685 1140	483	-4545	3492-5384	Warren, Balltown, Riley, Benson, Alexander	Big Injun, Speechley, Elk
4701704381000	SMITH GALE ET AL	1	KEY OIL COMPANY	KEY OIL INCORPORATED	5635 1120	500	-4515	3947-5340	Balltown, Riley, Benson, Alexander	Big Injun, Warren, Speechley, Elk
4701704697000	RUCK VIRGINIA W	JC-1250	ENERGY CORP OF AMER	UNION DRILLING CO	5505 991	246	-4914	4441-5151	Riley, Benson, Alexander	Big Injun, Warren, Speechley, Balltown, Elk
4701704412000	BURGESS HAROLD R	1	KEY OIL COMPANY	KEY OIL INCORPORATED	5492 1127	485	-4935	3906-5380	Balltown, Riley, Benson, Elk, Alexander	Big Injun, Warren, Speechley
4701704315000	KING MELANIE	1	KEY OIL COMPANY	KEY OIL INCORPORATED	5378 838	190	-4540	3610-5086	Balltown, Riley, Benson, Alexander	Big Injun, Warren, Speechley, Elk

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 04/14/2017

WW-9
(4/16)

API Number 47 - 017
Operator's Well No. 494507062 Hattie Unit 3H

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

APR 14 2017

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

WV Department of
Environmental Protection

Operator Name Antero Resources Corporation OP Code 494507062

Watershed (HUC 10) North Fork Hughes River Quadrangle Pullman 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 or Synthetic Based Mud

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

Additives to be used in drilling medium? Please See Attachment

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

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

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

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

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

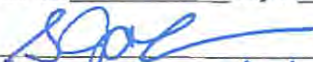
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is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

Company Official Signature 

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental & Regulatory Manager

Subscribed and sworn before me this 7 day of April, 20 17

 Notary Public

My commission expires 7/8/2020

DAP
4/12/17



07/14/2017

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 43.30 Acres

Prevegetation pH _____

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

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

Fertilizer amount 500 lbs/acre

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Mulch 2-3 Tons/acre

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Well Pad (9.00 Acres) + Water Containment Pad (5.51 Acres) + Access Road 1 (25.30 Acres) + Access Road 2 (1.12 Acres) + Utility Cables (Access Road) (2.37 Acres) = 43.30 Acres

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Tall Fescue	45
Perennial Rye Grass	20

Seed Type	lbs/acre
Tall Fescue	45
Perennial Rye Grass	20

*See General Erosion & Sediment Control Notes (Stanley Pad Final Design Pg 4)

*See General Erosion & Sediment Control Notes (Stanley Pad Final Design Pg 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:

Daniel Flack

Comments:

Title: Oil & Gas Inspector

Date: 4/12/17

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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911 Address
428 Cabin Run Rd.
West Union, WV 26456

Well Site Safety Plan

Antero Resources

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Environmental Protection

Well Name: Burgess Unit 1H-2H; Cool Unit 1H-2H; Hattie Unit 1H-3H;

Pad Location: STANLEY PAD
Doddridge County/ Central District

GPS Coordinates:

Entrance - Lat 39°14'19.31 "/Long -80°52'8.46" (NAD83)

Pad Center - Lat 39°14'13.56"/Long -80°52'46.11" (NAD83)

Driving Directions:

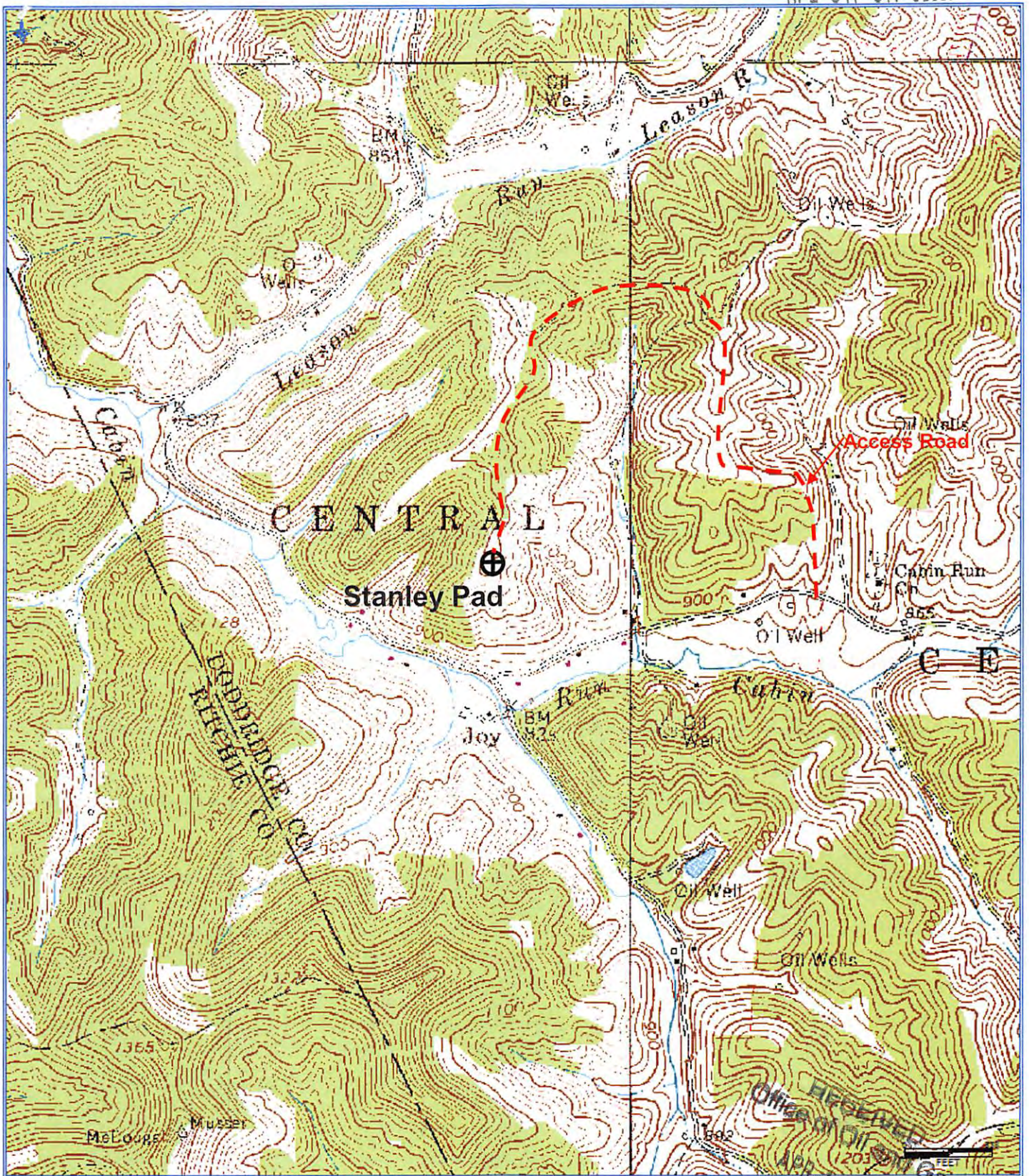
From Greenwood WV: Head southeast on Co Route 50/30/Old U.S. 50 W/Sunnyside Rd for 3.4 miles. Turn right onto Co Route 21/Oxford Rd and continue for 2 miles. Turn right onto Co Route 21/1/Cabin Run. After approximately 0.4 miles, access road will be on the right.

Alternate Route:

From William R Sharpe Jr Hospital near the town of Weston WV: Turn left onto US-119 S/US-33 W for 15.6 miles. Turn right onto WV-47 W for 3.6 miles. Continue forward onto WV-18 N for 9.4 miles. Turn left onto Grove Summers Rd for 5.9 miles. Grove summers Rd turns right and becomes Taylor Drain Rd, follow for 4.2 miles. Turn right onto S Fork of Hughes River for 0.9 miles. Continue straight onto Co Rte 21 for 2.5 miles. Turn left onto Co Rte 21/1 for 0.4 miles. The access road will be on the right.

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

John C. [Signature]
4/12/17



Antero Resources Corporation
 WV Department of
 Appalachian Basin
 Hattie Unit 3H
 Doddridge County
 Quadrangle: Pullman 7.5'
 Watershed: North Fork Hughes River
 District: Central
 Date: 3-12-2015

07/14/2017

LATITUDE 39°15'00"

6,256' TO BOTTOM HOLE

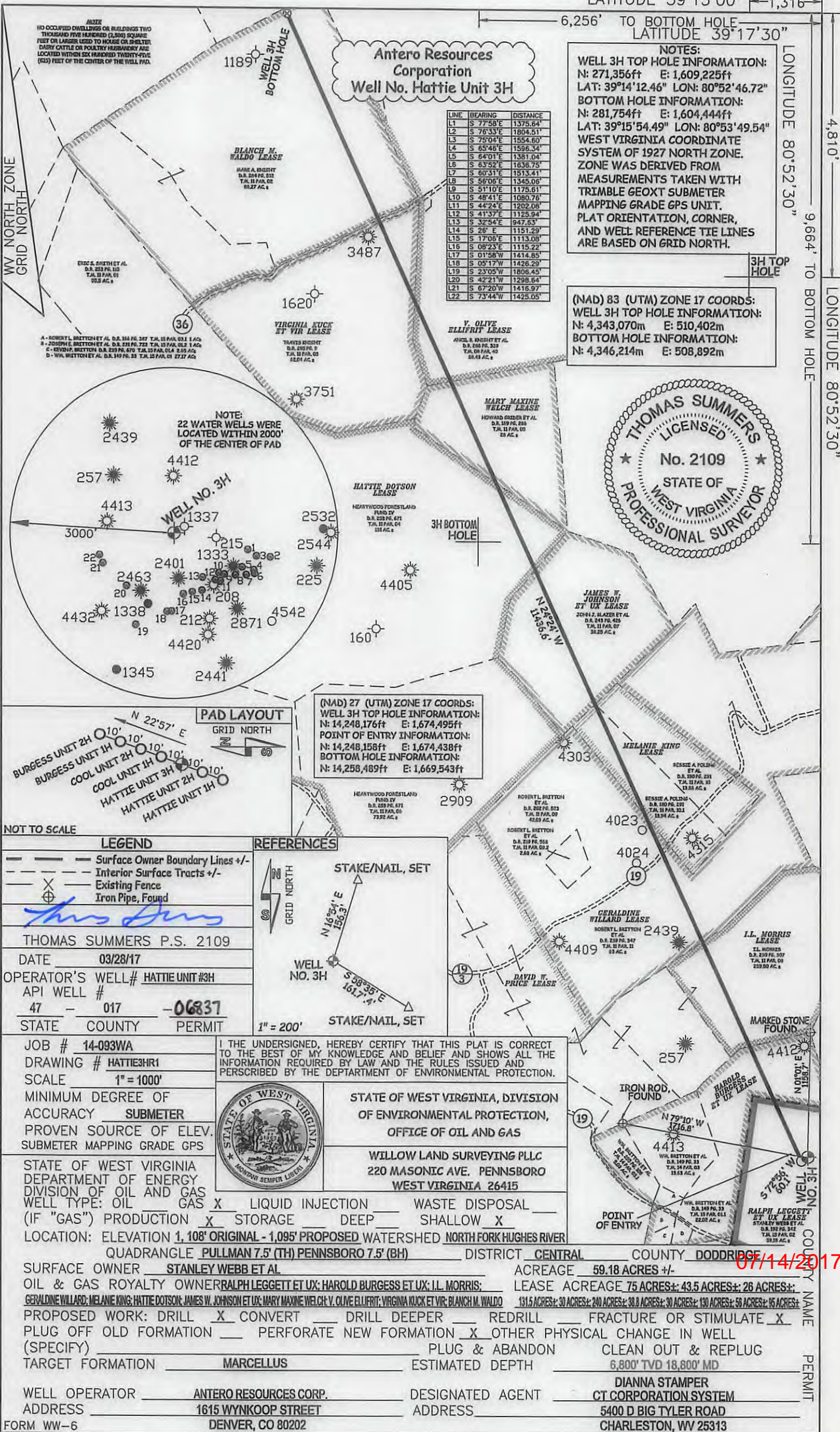
LATITUDE 39°17'30"

LONGITUDE 80°52'30"

4,810'

9,664' TO BOTTOM HOLE

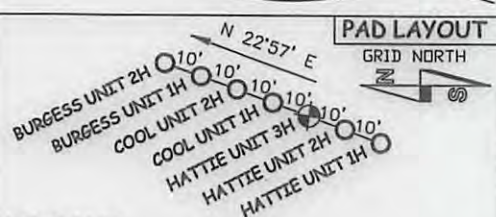
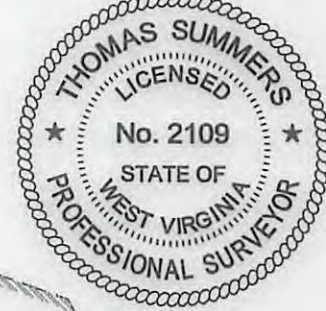
LONGITUDE 80°52'30"



LINE	BEARING	DISTANCE
L1	S 77°58' E	1375.64'
L2	S 76°33' E	1804.51'
L3	S 75°04' E	1554.60'
L4	S 65°46' E	1596.34'
L5	S 64°01' E	1381.04'
L6	S 63°52' E	1636.73'
L7	S 60°31' E	1513.41'
L8	S 56°06' E	1345.06'
L9	S 51°10' E	1175.61'
L10	S 48°41' E	1080.76'
L11	S 44°24' E	1202.08'
L12	S 41°37' E	1125.94'
L13	S 32°54' E	947.63'
L14	S 26° E	1151.29'
L15	S 17°03' E	1113.03'
L16	S 08°23' E	1115.22'
L17	S 01°58' W	1414.85'
L18	S 05°17' W	1426.29'
L19	S 23°05' W	1806.45'
L20	S 42°21' W	1298.64'
L21	S 67°20' W	1416.97'
L22	S 73°44' W	1425.05'

NOTES:
WELL 3H TOP HOLE INFORMATION:
 N: 271,356ft E: 1,609,225ft
 LAT: 39°14'12.46" LON: 80°52'46.72"
BOTTOM HOLE INFORMATION:
 N: 281,754ft E: 1,604,444ft
 LAT: 39°15'54.49" LON: 80°53'49.54"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 3H TOP HOLE INFORMATION:
 N: 4,343,070m E: 510,402m
BOTTOM HOLE INFORMATION:
 N: 4,346,214m E: 508,892m

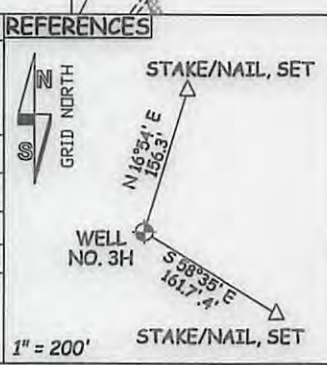


(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 3H TOP HOLE INFORMATION:
 N: 14,248,176ft E: 1,674,495ft
POINT OF ENTRY INFORMATION:
 N: 14,248,158ft E: 1,674,438ft
BOTTOM HOLE INFORMATION:
 N: 14,258,489ft E: 1,669,543ft

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Existing Fence
- Iron Pipe, Found

THOMAS SUMMERS P.S. 2109
 DATE 03/28/17
 OPERATOR'S WELL# HATTIE UNIT #3H
 API WELL # 47 - 017 - 06837
 STATE COUNTY PERMIT



JOB # 14-093WA
 DRAWING # HATTIE3HR1
 SCALE 1" = 1000'
 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
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 1,108' ORIGINAL - 1,095' PROPOSED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PULLMAN 7.5' (TH) PENNSBORO 7.5' (BH) DISTRICT CENTRAL COUNTY DODDRIDGE
 SURFACE OWNER STANLEY WEBB ET AL ACREAGE 59.18 ACRES +/-
 OIL & GAS ROYALTY OWNERRALPH LEGGETT ET UX; HAROLD BURGESS ET UX; I.L. MORRIS; LEASE ACREAGE 75 ACRES±; 43.5 ACRES±; 26 ACRES±; GERALDINE WILLARD; MELANIE KING; HATTIE DOTSON; JAMES W. JOHNSON ET UX; MARY MAXINE WELCH; Y. OLIVE ELLIFRIT; VIRGINIA KUCK ET VIR; BLANCH M. WALDO 131.5 ACRES±; 30 ACRES±; 240 ACRES±; 30.8 ACRES±; 30 ACRES±; 130 ACRES±; 55 ACRES±; 15 ACRES±
 PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,800' TVD 18,800' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313
 FORM WW-6 DENVER, CO 80202

07/14/2017

WW-6A1

Operator's Well Number Hattie Unit 3H

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>Ralph Leggett et ux Lease</u>			
Ralph Leggett et ux	Harold B. Smith	1/8	0088/0228
Harold B. Smith	Reeves Lewenthal	Assignment	0088/0232
Reeves Lewenthal	Ray Resources Corporation	Assignment	0099/0332
Ray Resources Corporation	Bow Valley Petroleum, Inc.	Assignment	0115/0031
Bow Valley Petroleum, Inc.	G.W. Petroleum, Inc.	Name Change	Recital in 0166/0312
G.W. Petroleum, Inc.	Great Western Onshore, Inc.	Name-Change	Recital in 0166/0312
Great Western Onshore, Inc.	Eastern American Energy Corporation	Assignment	0166/0312
Eastern American Energy Corporation	Targa Development, Inc.	Assignment	0219/0529
Targa Development, Inc.	Antero Resources Appalachian Corporation	Assignment	0257/0362
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Harold Burgess et ux Lease</u>			
Harold R. Burgess et ux	Key Oil Company	1/8	0181/0267
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>I.L. Morris Lease</u>			
I.L. (Ike) Morris	Antero Resources Corporation	1/8+	0348/0552
<u>Geraldine Willard Lease</u>			
Geraldine Willard	Key Oil Company	1/8	0260/0346
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0272/0350
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Melanie King Lease</u>			
Melanie King, et vir	Key Oil Company	1/8	0178/0001
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>James W. Johnson et ux Lease</u>			
James W. Johnson, et ux	Antero Resources Appalachian Corporation	1/8+	0256/0224
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Hattie Dotson Lease</u>			
Hattie O. Dotson	Charles E. Young	1/8	0054/0143
Helen F. Young and James E. Young, Co-Trustees Under the Will of Charles E. Young, Deceased	Palmer Hill	Assignment	0096/0478
William H. Snider and Mabel L. Snider, William H. Snider as Executor of Palmer A. Hill Estate	Key Oil Company	Assignment	0175/0622
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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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.

07/14/2017

WW-6A1

Operator's Well Number Hattie Unit 3H

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

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(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>Mary Maxine Welch Lease</u>			
Mary Maxine Welch Key Oil Company	Key Oil Company Antero Resources Appalachian Corporation	1/8 *Partial Assignment of Oil & Gas Leases	0177/0258 0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>V. Olive Ellifrit Lease</u>			
V. Olive Ellifrit et al Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation	Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation	1/8 Confirmatory Deed Assignment Amended Certificate of Authority	0031/0050 DB 0143/0345 0135/0583 AOI 0051/0795
CNG Transmission Corporation	Dominion Transmission, Inc.	Amended Certificate of Authority	AOI 0058/0362
Dominion Transmission, Inc., et al	CNX Gas Company, LLC	Affidavit of Name Changes and Merger Notice of Agreement	DB 0293/0252 0346/0007
CNX Gas Company, LLC	Antero Resources Corporation		
<u>Virginia Kuck et vir Lease</u>			
Virginia W. Kuck and William H. Kuck J & J Enterprises, Inc.	J & J Enterprises, Inc. Eastern American Energy Corporation	1/8 Notice of Dissolution & Termination of General Partnership Merger	0140/0220 0173/0424 0240/0298
Eastern American Energy Corporation Energy Corporation of America (ECA) Antero Resources Appalachian Corporation	Energy Corporation of America (ECA) Antero Resources Appalachian Corporation Antero Resources Corporation	*Partial Assignment Name Change	0272/0307 Exhibit 1

*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.

CONTINUED ON NEXT PAGE

07/14/2017

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

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- (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
Blanch M. Waldo Lease				
	Blanch M. Waldo	Petroleum Services, Inc.	1/8	0113/0619
	Petroleum Services, Inc.	J & J Enterprises, Inc.	Assignment	0117/0226
	J & J Enterprises, Inc.	Eastern American Energy Corporation	Merger	DB 0211/0137
	Eastern American Energy Corporation	Energy Corporation of America	Merger	0240/0498
	Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0288/0451
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

*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

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: Kevin Kilstrom
 Its: Senior VP of Production

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 WV Department of
 Environmental Protection

**FORM WW-6A1
EXHIBIT 1**

FILED

JUN 10 2013

Natalie E. Tennant,
Secretary of State
1900 Kanawha Blvd E
Bldg 1, Suite 157-K
Charleston, WV 25305



Penny Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsos.com
E-mail: business@wvsos.com

**APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY**

Office Hours: Monday - Friday
8:30 a.m. - 5:00 p.m. ET

FILE ONE ORIGINAL
(Two if you want a filed
stamped copy returned to you)
FEE: \$25.00

**** In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby ****
applies for an Amended Certificate of Authority and submits the following statement:

- 1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- 2. Date Certificate of Authority was issued in West Virginia: 6/26/2008
- 3. Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of Incorporation.)
- 4. Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- 5. Other amendments: (attach additional pages if necessary)

6. Name and phone number of contact person. (This is optional, however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)

<u>Alvyn A. Schopp</u>	<u>(303) 367-7310</u>
Contact Name	Phone Number

7. Signature Information (See below *Important Legal Notice Regarding Signature*):

Print Name of Signer: <u>Alvyn A. Schopp</u>	Title/Capacity: <u>Authorized Person</u>
Signature: <u><i>Alvyn A. Schopp</i></u>	Date: <u>June 10, 2013</u>

***Important Legal Notice Regarding Signature:** Per West Virginia Code §31D-1-129. Penalty for signing false documents. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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API 047-017-06837



April 7, 2017

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: Hattie Unit 3H
Quadrangle: Pullman 7.5'
Doddridge County/Central District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Hattie Unit 3H 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 Hattie Unit 3H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

A handwritten signature in blue ink that reads "Haley West". The signature is written in a cursive, flowing style.

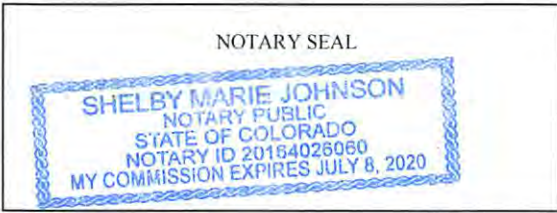
Haley West
Landman

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Certification of Notice is hereby given:

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

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Kevin Kilstrom</u> <i>[Signature]</i>		<u>Denver, CO 80202</u>
Its:	<u>Senior VP of Production</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7310</u>	Email:	<u>sklaas@anteroresources.com</u>



Subscribed and sworn before me this 6 day of April 2017.

[Signature] Notary Public

My Commission Expires 7/8/2020

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 deprivacvofficer@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: 04/07/2017 **Date Permit Application Filed:** 04/07/2017

Notice of:

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

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

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

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

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

SURFACE OWNER(s)
Name: PLEASE SEE ATTACHMENT
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: PLEASE SEE ATTACHMENT
Address: _____

Name: _____
Address: _____

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

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

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

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL,
-SPRING OR OTHER WATER SUPPLY SOURCE
Name: PLEASE SEE ATTACHMENT
Address: _____

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

*Please attach additional forms if necessary

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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 as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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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 fees of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

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WV Department of
Environmental Protection
07/14/2017

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

WW-6A
(8-13)

API NO. 47-017 ^{API 047-017-06837}
OPERATOR WELL NO. Hattie Unit 3H
Well Pad Name: Stanley Pad

Notice is hereby given by:

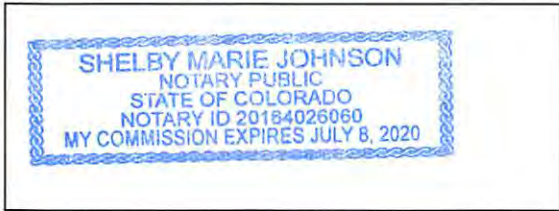
Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: sklaas@anteroresources.com



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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 7 day of April 2017.

[Signature] Notary Public

My Commission Expires 7/8/2020

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WV Department of
Environmental Protection
05/14/2017

WW-6A Notice of Application Attachment (Hattie Unit 3H):

List of Owners with Proposed Disturbance associated with Hattie Unit 3H (Stanley Pad):

WELL PAD – These owners were notified of all well work permit applications and have executed signed Surface Use Agreements with Antero Resources Corporation.

TM 15 PCL 2

Owner: Stanley Webb, et al (James E. Webb,
Richard L. Webb, Brian M. Webb) /
Address: 945 Cabin Run Rd.
West Union, WV 26456

ROAD AND/OR OTHER DISTURBANCE – These owners were only notified if their tract is overlying the oil and gas leasehold being developed by the proposed well work as outlined in WV Code 22-6A-10(b)(2).

TM 15 PCL 2 (On-Lease) /

Owner: Stanley Webb, et al (James E. Webb,
Richard L. Webb, Brian M. Webb)
Address: 945 Cabin Run Rd.
West Union, WV 26456

TM 12 PCL 38 (Off-Lease)

TM 12 PCL 37.2 (Off-Lease)
Owner: Shirley Jean Williams
Address: 296 Cabin Run Rd
West Union, WV 26456

TM 15 PCL 1.1 (On-Lease) /

Owner: William P & Sharon D Britton
Address: RR 1 Box 203
West Union, WV 26456

TM 12 PCL 26 (Off-Lease)

TM 12 PCL 25 (Off-Lease)
Owner: Randy Reese & Gary Wheeler
ET AL
Address: 1636 Lesson Rn.
Greenwood, WV 26415

Owner: William P & Sharon D Britton /
(2nd Address)
Address: 34 Britton Lane
West Union, WV 26456

TM 11 PCL 8 (On-Lease) /

Owner: I. L. (Ike) Morris
Address: PO Box 397
Glennville, WV 26351

Owner: I. L. (Ike) Morris (2nd Address) /
Address: 1595 US Highway 33 E
Glennville, WV 26351

TM 15 PCL 3 (Off-Lease)

Owner: James E. Webb (Life)
Address: 813 Cabin Run Rd
West Union, WV 26456

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Environmental Protection
07164/2017

WATER SOURCE OWNERS: These owners of water sources, within 1500' of the well pad, were notified of all well work permit applications.

1 Water Well: 1376' (WW1)

Owner: Robert L. Britton, et ux
Address: 2641 Leeson Run
 Pennsboro, WV 26415

5 Water Wells: 1113' (WW15), 1115' (WW16), 1415' (WW17), 1426' (WW18), 1425' (WW22)

Owner: James E. Webb
Address: RR 1 Box 208A
 West Union, WV 26456

1 Water Well: 1381' (WW5)

Owner: William P. Britton, et al
Address: RR 1 Box 203
 West Union, WV 26456

1 Water Well: 1417' (WW21)

Owner: Daniel M. Webb
Address: 945 Cabin Run Rd
 West Union, WV 26456

Owner: William P & Sharon D Britton
 (2nd Address)

Address: 34 Britton Lane
 West Union, WV 26456

3 Water Wells: 1345' (WW8), 1176' (WW9), 1081' (WW10)

Owner: Stanley Webb, et al (James E. Webb, Richard L. Webb, Brian M. Webb) (3 Water Sources)
Address: 945 Cabin Run Rd.
 West Union, WV 26456

2 Water Wells: 1202' (WW11) & 1299' (WW20)

Owner: Brian Webb
Address: RR 1 Box 207
 West Union, WV 26456

1 Water Well: 1126' (WW12)

Owner: Edward Webb, et al
Address: RR 1 Box 208
 West Union, WV 26456

1 Water Well: 948' (WW13)

Owner: Robert P. Harris, et al
Address: RR 1 Box 207
 West Union, WV 26456

1 Water Well: 1151' (WW14)

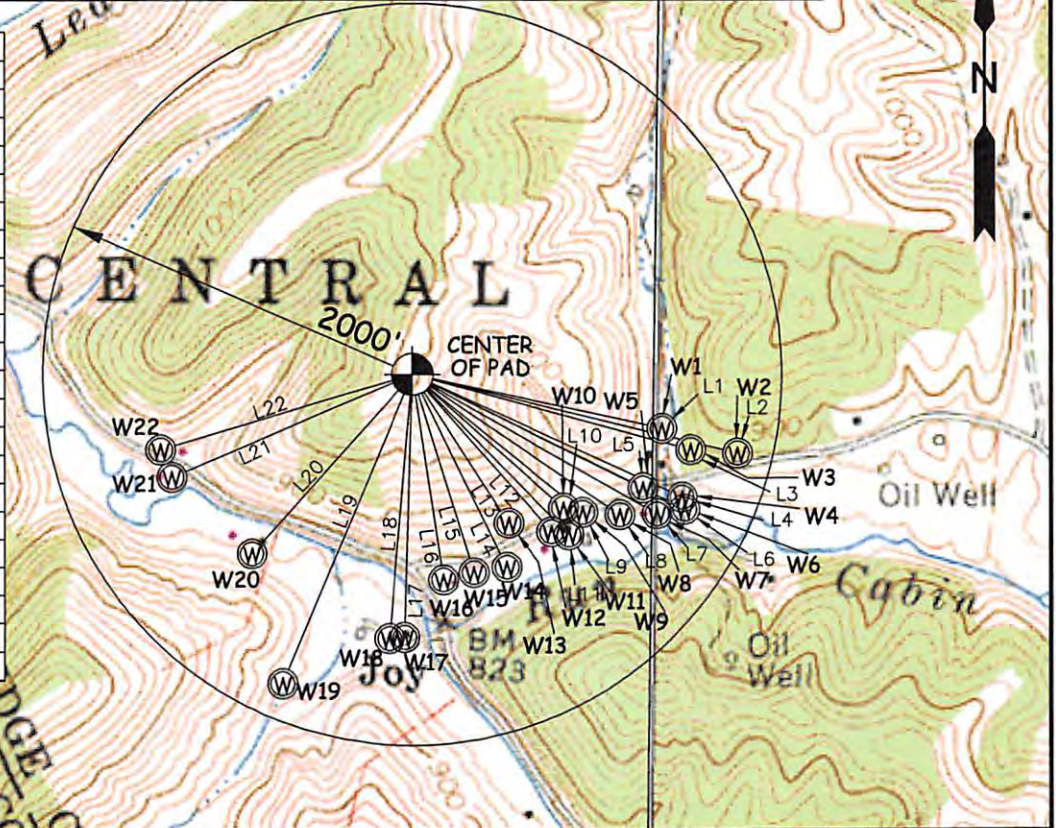
Owner: Darlene D. Winemiller, et al
Address: 858 Cabin Run Rd
 West Union, WV 26456

Please note there are 6 additional water sources identified on the attached map, however they are located greater than 1500' from the proposed well location.

FORM WW-9 PAGE OF

STANLEY PAD ANTERO RESOURCES CORPORATION

LINE	BEARING	DISTANCE
L1	S 77°58'E	1375.64'
L2	S 76°33'E	1804.51'
L3	S 75°04'E	1554.60'
L4	S 65°46'E	1596.34'
L5	S 64°01'E	1381.04'
L6	S 63°52'E	1636.75'
L7	S 60°31'E	1513.41'
L8	S 56°06'E	1345.06'
L9	S 51°10'E	1175.61'
L10	S 48°41'E	1080.76'
L11	S 44°24'E	1202.08'
L12	S 41°37'E	1125.94'
L13	S 32°54'E	947.63'
L14	S 26° E	1151.29'
L15	S 17°06'E	1113.08'
L16	S 08°23'E	1115.22'
L17	S 01°58'W	1414.85'
L18	S 05°17'W	1426.29'
L19	S 23°05'W	1806.45'
L20	S 42°21'W	1298.64'
L21	S 67°20'W	1416.97'
L22	S 73°44'W	1425.05'



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

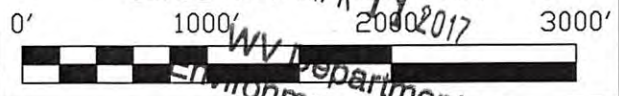
WELL	SURFACE OWNER	ADDRESS	DISTRICT-TAX MAP-PARCEL	WELL LATITUDE	WELL LONGITUDE
W1	ROBERT L. BRITTON ET UX	2641 LEESON RUN PENNSBORO, WV 26415	1-15-1.3	39° 14' 08.40"	80° 53' 03.98"
W2	JOSEPH E. BRITTON ET AL	3624 CABIN RUN RD WEST UNION, WV 26456	1-15-1.2	39° 14' 06.95"	80° 53' 03.19"
W3	WILLIAM P. BRITTON ET AL	RT 1 BOX 203 WEST UNION, WV 26456	1-15-1	39° 14' 02.93"	80° 52' 57.61"
W4	WILLIAM P. BRITTON ET AL	RT 1 BOX 203 WEST UNION, WV 26456	1-15-10	39° 13' 56.02"	80° 52' 55.35"
W5	WILLIAM P. BRITTON ET AL	RT 1 BOX 203 WEST UNION, WV 26456	1-15-10	39° 13' 58.49"	80° 52' 48.07"
W6	WILLIAM P. BRITTON ET AL	RT 1 BOX 203 WEST UNION, WV 26456	1-15-10	39° 13' 58.57"	80° 52' 47.02"
W7	STANLEY WEBB	945 CABIN RUN RD WEST UNION, WV 26456	1-15-2.2	39° 14' 01.67"	80° 52' 44.40"
W8	STANLEY WEBB	945 CABIN RUN RD WEST UNION, WV 26456	1-15-2.8	39° 14' 02.08"	80° 52' 42.31"
W9	STANLEY WEBB	945 CABIN RUN RD WEST UNION, WV 26456	1-15-2.8	39° 14' 02.40"	80° 52' 40.06"
W10	STANLEY WEBB ET AL	945 CABIN RUN RD WEST UNION, WV 26456	1-15-2	39° 14' 04.76"	80° 52' 39.98"
W11	BRIAN WEBB	RT 1 BOX 207 WEST UNION, WV 26456	1-15-2.7	39° 14' 04.34"	80° 52' 37.01"
W12	EDWARD WEBB ET AL	RT 1 BOX 208 WEST UNION, WV 26456	1-15-2.6	39° 14' 04.19"	80° 52' 35.82"
W13	ROBERT P. HARRIS ET AL	RT 1 BOX 207 WEST UNION, WV 26456	1-15-2.9	39° 14' 05.62"	80° 52' 36.22"
W14	DARLENE D. WINEMILLER ET AL	RT 1 BOX 207A WEST UNION, WV 26456	1-15-2.12	39° 14' 05.40"	80° 52' 34.90"
W15	JAMES E. WEBB	RT 1 BOX 208A WEST UNION, WV 26456	1-15-2.5	39° 14' 05.30"	80° 52' 32.34"
W16	JAMES E. WEBB	RT 1 BOX 208A WEST UNION, WV 26456	1-15-2.5	39° 14' 05.39"	80° 52' 29.79"
W17	JAMES E. WEBB	RT 1 BOX 208A WEST UNION, WV 26456	1-15-3	39° 14' 05.65"	80° 52' 27.86"
W18	JAMES E. WEBB	RT 1 BOX 208A WEST UNION, WV 26456	1-15-3	39° 14' 06.77"	80° 52' 30.78"
W19	JAMES E. WEBB	RT 1 BOX 208A WEST UNION, WV 26456	1-15-3	39° 14' 06.29"	80° 52' 28.05"
W20	BRIAN M. WEBB	RT 1 BOX 207 WEST UNION, WV 26456	1-15-3.5	39° 14' 08.82"	80° 52' 27.51"
W21	DANIEL M. WEBB	945 CABIN RUN RD WEST UNION, WV 26456	1-15-3.6	39° 14' 08.67"	80° 52' 24.29"
W22	JAMES E. WEBB	RT 1 BOX 208A WEST UNION, WV 26456	1-15-3	39° 14' 09.92"	80° 52' 29.52"

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

TOPO SECTION(S) OF :
OXFORD 7.5' QUAD.
& PULLMAN 7.5' QUAD.

JOB #: 14-066WA
FILE: STANLEYWATERMAP

SCALE : 1-INCH = 1000- FEET



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Office of Oil and Gas
WV Department of Environmental Protection
03/14/2017

DATE: 03/28/17

DRAWN BY: A.L.B.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Jim Justice
 Governor

Thomas J. Smith, P. E.
 Secretary of Transportation/
 Commissioner of Highways

Reissued March 21, 2017

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 Stanley Webb Pad, Doddridge County
 Hattie 3H Well site 47-017-06837

Dear Mr. Martin,

This well site will be accessed from a DOH permit 04-2012-1097 issued to Antero Resources Corporation for access to the State Road for a well site located off of Doddridge County Route 21/1 SLS.

The 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 January 3, 2012.

Very Truly Yours,

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

APR 11 2017

Cc: Shelby Johnson
 Antero Resources Corporation
 CH, OM, D-4
 File

WV Department of
 Environmental Protection

07/14/2017

List of Anticipated Additives Used for Fracturing or Stimulating Well

API 047-017-06837

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

07/14/2017

API 047-017-06834



STANLEY WELL AND WATER CONTAINMENT PAD AS BUILT PLANS

**WVDEP OOG
ACCEPTED AS-BUILT**
VBJ 5/30/2017

ANTERO RESOURCES CORPORATION



SHEET INDEX	
PAGE NO.	DESCRIPTION
1	COVER PAGE & LOCATION MAP
2	OVERALL SITE PLAN
3-6	SITE PLAN
10-12	PROFILES

PROJECT CONTACTS

PROJECT OWNER

ANTERO RESOURCES
1615 WYNKOOP STREET
DENVER, CO 80202

CONTACT: BOB WIRKS
DESIGN MANAGER
304.842.4100 OFFICE
304.827.7405 CELL

CONTACT: JON MCEIVERS
OPERATIONS
SUPERINTENDENT
304.842.4730 OFFICE
303.868.2423 CELL

CONTACT: ELI WAGNER
ENVIRONMENTAL
ENGINEER
304.842.4608 OFFICE
304.476.0770 CELL

CONTACT: MARION KUNZLER
CONSTRUCTION MANAGER
304.641.8242

LOCATION SURVEYOR

TRIPLE H ENTERPRISES
CONTACT: DARELL BOICE, PS
145 CABIN RUN ROAD
WEST UNION, WV 26456
304.299.0493

ENGINEER OF RECORD

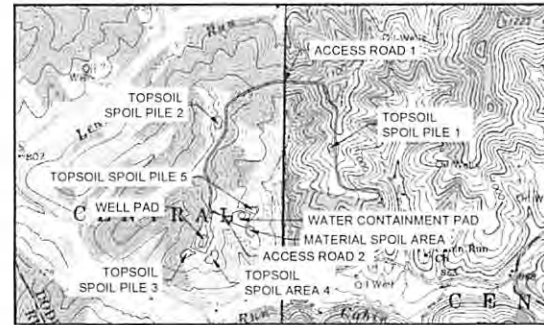
KLEINFELDER EAST, INC.
CONTACT: JOSH D. FREGOSI, PE
WV PE #22091
230 EXECUTIVE DRIVE, SUITE 122
CRANFERRY TOWNSHIP, PA 16066
724.772.2072 OFFICE
724.772.7070 FAX

ENVIRONMENTAL/ DELINEATION BOUNDARY

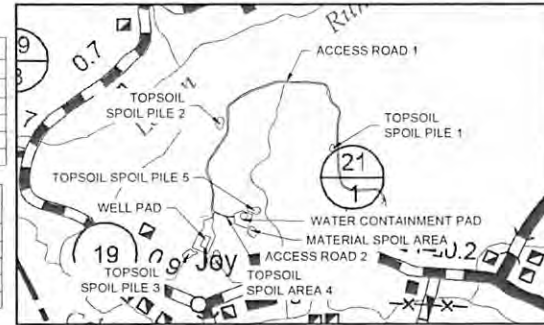
ALL STAR ECOLOGY, LLC
CONTACT: TERRY BURMAN
1589 MEADOWDALE ROAD
FARMINGTON, WV 26554
304.815.3490 OFFICE
858.243.9900 CELL

TOPO SURVEYOR

BLUE MOUNTAIN AERIAL MAPPING
CONTACT: CRAIG FRY
11023 MASON DIXON HIGHWAY
BURTON, WV 25562
304.662.2026 OFFICE
304.815.4090 CELL



NORTH MERIDIAN REFERENCED TO NAD83 WEST VIRGINIA STATE PLANE: NORTH ZONE
OXFORD & PULLMAN 7.5 QUAD
1 (T) J. MUSKINGUM MIDDLE ISLAND WATERSHED



WELL HEAD LAYOUT				
WELL NAME	NAD 83 (WV NORTH ZONE)			
	NORTHING	EASTING	LATITUDE	LONGITUDE
BURGESS UNIT 2H	27427.3202	1577796.5654	38.25607830	-80.87842190
BURGESS UNIT 1H	27418.1116	1577795.6678	38.25605264	-80.87843518
COOL UNIT 2H	271408.9029	1577791.7888	38.25602720	-80.87844843
COOL UNIT 1H	271399.4543	1577787.8899	38.25601175	-80.87846169
HATTIE UNIT 3H	271390.4856	1577785.9911	38.25607631	-80.87847495
HATTIE UNIT 2H	271361.2770	1577780.0923	38.25605087	-80.87848823
HATTIE UNIT 1H	271372.0983	1577776.1935	38.25625422	-80.87860748

WELL HEAD LAYOUT				
WELL NAME	NAD 27 (WV NORTH ZONE)		UTM ZONE 17 (METERS)	
	NORTHING	EASTING	NORTHING	EASTING
BURGESS UNIT 2H	271302.7644	1609240.6569	4343081.7582	510406.1527
BURGESS UNIT 1H	271383.5568	1609236.7580	4343078.9330	510405.0118
COOL UNIT 2H	271374.3472	1609232.8591	4343075.1078	510403.8708
COOL UNIT 1H	271395.1386	1609228.9602	4343073.2825	510402.7299
HATTIE UNIT 3H	271395.9391	1609225.0613	4343070.4573	510401.5888
HATTIE UNIT 2H	271348.7215	1609221.1624	4343067.6521	510340.4480
HATTIE UNIT 1H	271337.5129	1609217.2634	4343064.8069	510369.3073

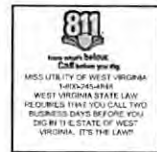
LIMITS OF DISTURBANCE		
DESCRIPTION	AREA (ACRES)	AFFECTED TAX PARCELS
ACCESS ROAD 1	0.69	JAMES W WEBB TAX MAP # 15 PAGE 8
JAMES WEBB ACCESS ROAD	2.37	DB 221 PG. 17
ACCESS ROAD 1	1.17	SHIRLEY J WILLIAMS TAX MAP # 12 PARCEL # 26 WB. 41 PG. 168
ACCESS ROAD 1	16.34	ICE MORRIS TAX MAP # 11 PARCEL # 8 DB 230 PG. 307
ACCESS ROAD 2	8.63	
WATER CONTAINMENT PAD	1.14	
TOPSOIL SPOIL PILE 1	0.76	
TOPSOIL SPOIL PILE 2	1.14	
TOPSOIL SPOIL PILE 5	0.93	
DIVERSION DITCHES	0.18	
ACCESS ROAD 1	0.20	ROBERT WILLIAMS TAX MAP # 12 PARCEL # 37 DB 201 PG. 428
ACCESS ROAD 1	2.30	SHIRLEY J WILLIAMS TAX MAP # 12 PARCEL # 37 WB. 41 PG. 168
ACCESS ROAD 1	0.68	RANDY REESE & GARY WHEELER TAX MAP # 12 PARCEL # 28 WB. 38 PG. 219
ACCESS ROAD 1	0.27	RANDY REESE & GARY WHEELER TAX MAP # 12 PARCEL # 28 WB. 38 PG. 219
ACCESS ROAD 1	1.06	WM F & SHARON DE BRITTON TAX MAP # 15 PARCEL # 11 DB 140 PG. 33
ACCESS ROAD 2	0.84	
ACCESS ROAD 1	0.48	STANLEY R. WEBB ET AL TAX MAP # 15 PARCEL # 2 DB 142 PG. 342
ACCESS ROAD 2	0.66	
WATER CONTAINMENT PAD	1.80	
MATERIAL SPOIL PILE 1	0.83	
WELL PAD	0.37	
TOPSOIL SPOIL AREA 3	1.23	
TOPSOIL SPOIL AREA 4	1.40	
DIVERSION DITCHES	0.55	
TOTAL	43.30	
TOTAL WOODED ACRES DISTURBED	22.88	
TOTAL NON WOODED ACRES DISTURBED	20.46	

LIMITS OF DISTURBANCE	
DESCRIPTION	AREA (ACRES)
WELL PAD	0.00
WATER CONTAINMENT PAD	3.01
ACCESS ROAD 1	36.30
ACCESS ROAD 2	1.17
JAMES WEBB ACCESS ROAD	2.37
TOTAL	43.30

DESCRIPTION	NAD 83 (WV NORTH)		UTM ZONE 17 (METERS)	
	LATITUDE	LONGITUDE	NORTHING	EASTING
CENTER OF WELL PAD	38.23710135	-80.87947054	4343095.4306	510401.4184
CENTER OF WATER CONTAINMENT PAD	38.23797324	-80.87732122	4343102.4394	510587.2061
STANLEY ACCESS ROAD ENTRANCE	38.23899666	-80.86901707	4343273.7250	511303.8363
JAMES WEBB ACCESS ROAD ENTRANCE	38.23822000	-80.86947100	4342998.9441	511351.3615

FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HECRAS STUDY COMPLETED:	N/A
FLOODPLAIN SHOWN ON DRAWINGS:	N/A
FIRM MAP NUMBER(S) FOR SITE:	54017C0200C & 54017C0225C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N/A

ACCESS ROAD LENGTH (FEET)	
DESCRIPTION	FEET
ACCESS ROAD 1	6,347
ACCESS ROAD 2	368
TOTAL	6,715



DESIGN CERTIFICATION
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS #354

MM-109 PERMIT
ANTERO RESOURCES WILL OBTAIN AN ENCROACHMENT PERMIT (MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

WELL LOCATION RESTRICTIONS
DRILL PAD IS TO COMPLY WITH WELL LOCATION RESTRICTIONS OF WV CODE 22-8-12. THE PADS COMPLY WITH THE FOLLOWING RESTRICTIONS:
• 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
• 250' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 2000 SF USED FOR POLY OR DARY OR MEASURED FROM THE CENTER OF THE PAD
• 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
• 300' FROM EDGE OF DISTURBANCE TO NATURALLY REPRODUCING TRIBUTARY STREAMS
• 1000' OF SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY

PLAN REPRODUCTION WARNING
THIS PLAN HAS BEEN SET IN THIS COLOR AND IS NOT TO BE REPRODUCED IN ANY OTHER COLOR. ANY SET OF THIS PLAN THAT IS NOT PLOTTED IN FULL COLOR IS NOT TO BE CONSIDERED AN OFFICIAL COPY. ANY REPRODUCTION OF THIS PLAN SHALL BE AT THE USER'S RISK.
THE PLANS HAVE BEEN CREATED WITH FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED AN OFFICIAL COPY.
UNAUTHORIZED REPRODUCTION OR ALTERATION OF THIS PLAN IS PROHIBITED.
SCALE 1"=100'



NO.	REVISION	DATE
1	API & JAMES WEBB ACCESS ROAD	06/26/2017
2		
3		
4		

KLEINFELDER
Bright People. Right Solutions.
230 EXECUTIVE DRIVE, SUITE 122
CRANFERRY TOWNSHIP, PA 16066
PH: 724.772.2072 FAX: 724.772.7070
KLEINFELDER EAST, INC.
1615 WYNKOOP STREET
DENVER, CO 80202

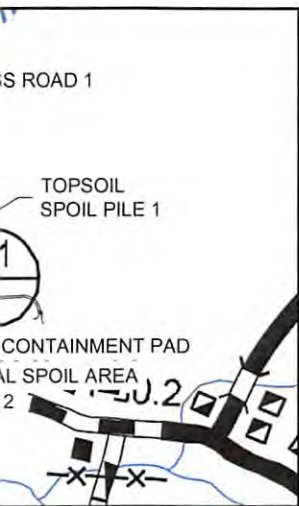
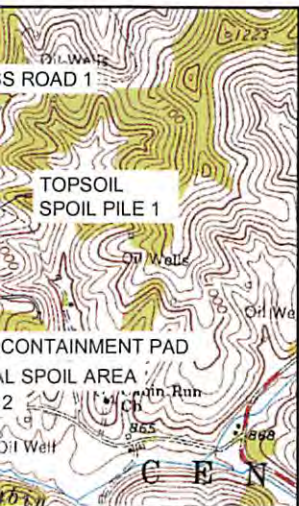
**STANLEY WELL & W.C. PAD
COVER PAGE & LOCATION MAP**
ANTERO RESOURCES CORPORATION
STANLEY WELL & WATER CONTAINMENT PAD
CENTRAL DISTRICT
DOODRIDGE COUNTY
WEST VIRGINIA

DESIGNED BY:	CHT
MODIFIED BY:	DHP
CHECKED BY:	JSF
DATE:	05/24/2017
SCALE:	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 10 20 30 40 50 60
AS BUILT	1
	1 of 12 sheets

WATER CONTAINMENT PAD PLANS

CORPORATION

ro
WCAV



PRODUCTION WARNING

PLANS WERE CREATED ON ANSI D (22"x34") SHEETS. FOR FULL COLOR PLOTTING, ANY SET IS NOT PLOTTED IN FULL COLOR SHALL NOT BE USED FOR CONSTRUCTION PURPOSES. INFORMATION MAY BE LOST IN COPYING AND/OR GRAY

SHEET INDEX	
PAGE NO.	DESCRIPTION
1	COVER PAGE & LOCATION MAP
2	OVERALL SITE PLAN
3-8	SITE PLAN
9-11	PROFILES

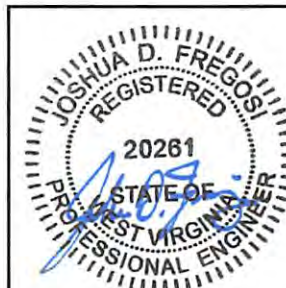
WELL HEAD LAYOUT				
WELL NAME	NAD 83 (WV NORTH ZONE)			
	NORTHING	EASTING	LATITUDE	LONGITUDE
BURGESS UNIT 2H	271427.3202	1577799.5864	39.23697809	-80.87942190
BURGESS UNIT 1H	271418.1116	1577795.6876	39.23695264	-80.87943516
COOL UNIT 2H	271408.9029	1577791.7888	39.23692720	-80.87944843
COOL UNIT 1H	271399.6943	1577787.8899	39.23690175	-80.87946169
HATTIE UNIT 3H	271390.4856	1577783.9911	39.23687631	-80.87947495
HATTIE UNIT 2H	271381.2770	1577780.0923	39.23685087	-80.87948822
HATTIE UNIT 1H	271372.0683	1577776.1935	39.23682542	-80.87950148

WELL HEAD LAYOUT				
WELL NAME	NAD 27 (WV NORTH ZONE)		UTM ZONE 17 (METERS)	
	NORTHING	EASTING	NORTHING	EASTING
BURGESS UNIT 2H	271392.7644	1609240.6569	4343081.7582	510406.1527
BURGESS UNIT 1H	271383.5558	1609236.7580	4343078.9330	510405.0118
COOL UNIT 2H	271374.3472	1609232.8591	4343076.1078	510403.8708
COOL UNIT 1H	271365.1386	1609228.9602	4343073.2825	510402.7299
HATTIE UNIT 3H	271355.9301	1609225.0613	4343070.4573	510401.5889
HATTIE UNIT 2H	271346.7215	1609221.1624	4343067.6321	510400.4480
HATTIE UNIT 1H	271337.5129	1609217.2634	4343064.8069	510399.3070

LIMITS OF DISTURBANCE		
DESCRIPTION	AREA (ACRES)	AFFECTED TAX PARCELS
ACCESS ROAD 1	0.69	JAMES E WEBB TAX MAP # 15 PAGE # 3 DB 221 / PG. 17
JAMES WEBB ACCESS ROAD	2.37	
ACCESS ROAD 1	1.17	SHIRLEY J. WILLIAMS TAX MAP # 12 PARCEL # 36 WB. 41 / PG. 188
ACCESS ROAD 1	16.34	IKE MORRIS TAX MAP # 11 PARCEL # 8 DB 230 / PG. 307
ACCESS ROAD 2	0.43	
WATER CONTAINMENT PAD	1.14	
TOPSOIL SPOIL PILE 1	0.76	
TOPSOIL SPOIL PILE 2	1.18	
TOPSOIL SPOIL PILE 5	0.93	
DIVERSION DITCHES	0.16	
ACCESS ROAD 1	0.33	ROBERT WILLIAMS TAX MAP # 12 PARCEL # 37 DB 201 / PG. 428
ACCESS ROAD 1	2.39	SHIRLEY J. WILLIAMS TAX MAP # 12 PARCEL # 37.2 WB. 41 / PG. 168
ACCESS ROAD 1	0.68	RANDY REESE & GARY WHEELER TAX MAP # 12 PARCEL # 26 WB. 38 / PG. 219
ACCESS ROAD 1	0.22	RANDY REESE & GARY WHEELER TAX MAP # 12 PARCEL # 25 WB. 38 / PG. 219
ACCESS ROAD 1	1.06	WM P & SHARON DE BRITTON TAX MAP # 15 PARCEL # 1.1 DB 149 / PG. 33
ACCESS ROAD 2	0.04	
ACCESS ROAD 1	0.48	STANLEY R. WEBB ET AL TAX MAP # 15 PARCEL # 2 DB 192 / PG. 342
ACCESS ROAD 2	0.65	
WATER CONTAINMENT PAD	1.80	
MATERIAL SPOIL PILE 1	0.93	
WELL PAD	6.37	
TOPSOIL SPOIL AREA 3	1.23	
TOPSOIL SPOIL AREA 4	1.40	
DIVERSION DITCHES	0.55	
TOTAL	43.30	
TOTAL WOODED ACRES DISTURBED	22.65	
TOTAL NON-WOODED ACRES DISTURBED	20.65	

LIMITS OF DISTURBANCE	
DESCRIPTION	AREA (ACRES)
WELL PAD	9.00
WATER CONTAINMENT PAD	5.51
ACCESS ROAD 1	25.30
ACCESS ROAD 2	1.12
JAMES WEBB ACCESS ROAD	2.37
TOTAL	43.30

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Office of Oil and Gas
APR 14 2017
WV Department of
Environmental Protection



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NO.	REVISION	BY	DATE
1			
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3			
4			
5			

API 047-017-06833
4/12/17
Jul 2017

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Bright People. Right Solutions.
230 EXECUTIVE DRIVE, SUITE 122
CRANBERRY TOWNSHIP, PA 16066
PH: 724-772-7072 FAX: 724-772-7079
www.kleinfelder.com

ACAD FILE: COVER_AS_BUILT.dwg
FIG. NO. 2015082-001A

**STANLEY WELL & W.C. PAD
COVER PAGE & LOCATION MAP**

ANTERO RESOURCES CORPORATION
STANLEY WELL & WATER CONTAINMENT PAD
CENTRAL DISTRICT
DODDRIDGE COUNTY
WEST VIRGINIA

DESIGNED BY: CHT
MODIFIED BY: DHF
CHECKED BY: JDF
DATE: 04/05/2017
SCALE:
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
AS BUILT

07/14/2017
1 of 11 sheets

