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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, July 17, 2019  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for KILSKA UNIT 1H  
47-095-02582-00-00

**Extend Lateral**

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief

A handwritten signature in blue ink, appearing to read 'James A. Martin', is written over the typed name and title.

Operator's Well Number: KILSKA UNIT 1H  
Farm Name: GARY D. DAWSON ET UX  
U.S. WELL NUMBER: 47-095-02582-00-00  
Horizontal 6A New Drill  
Date Modification Issued: July 17, 2019

Promoting a healthy environment.

WW-6B  
(04/15)

API NO. 47- 095 - 02582  
OPERATOR WELL NO. Kilska Unit 1H  
Well Pad Name: Dawson 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 095 - Tyler Centerville Shirley 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Kilska Unit 1H Well Pad Name: Dawson Pad

3) Farm Name/Surface Owner: Gary D. Dawson et ux Public Road Access: State Route 18

4) Elevation, current ground: 1009' Elevation, proposed post-construction: \_\_\_\_\_

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: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23000' MD

11) Proposed Horizontal Leg Length: 14679'

12) Approximate Fresh Water Strata Depths: 115', 320', 455'

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

14) Approximate Saltwater Depths: 551', 1583', 1830'

15) Approximate Coal Seam Depths: 275', 424', 975'

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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API NO. 47- 095 - 02582  
OPERATOR WELL NO. Kilska Unit 1H  
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18) **CASING AND TUBING PROGRAM**

<b>TYPE</b>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	H-40	94#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	505 *see # 19	505 *see # 19	CTS, 702 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#	23000	23000	5917 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

<b>TYPE</b>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
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-H/POZ & 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			

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Page 2 of 3

WW-6B  
(10/14)

API NO. 47- 095 - 02582  
OPERATOR WELL NO. Kilska Unit 1H  
Well Pad Name: Dawson Pad

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): Existing 28.65 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 9.14 acres

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

WW-6A1

Operator's Well Number Kilska 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)

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>Gary D. Dawson et ux Lease</u></b>			
Gary D. Dawson et ux	Antero Resources Corporation	1/8+	0459/0133
<b><u>Coastal Forest Resources Co. Lease (TM 15 P 28)</u></b>			
Coastal Forest Resources Co.	Noble Energy Inc	1/8+	0534/0250
Noble Energy Inc	CNX Gas Co. LLC	Assignment	0549/0523
CNX Gas Co. LLC	Antero Resources Corporation	Assignment	0564/0704
<b><u>BRC Appalachian Minerals I LLC Lease</u></b>			
BRC Appalachian Minerals I LLC	BRC Working Interest Company LLC	1/8+	0369/0300
BRC Working Interest Company LLC	Chesapeake Appalachia LLC	Assignment	0369/0784
Chesapeake Appalachia LLC	SWN Production Company	Assignment	0465/0463
SWN Production Company	Antero Exchange Properties LLC	Assignment	0544/0242
Antero Exchange Properties LLC	Antero Resources Corporation	Merger	0552/0315
<b><u>Ralph J. Underwood et ux Lease (TM 15 PCL 7)</u></b>			
Ralph J. Underwood et ux	Chesterfield Energy Corporation	1/8+	0265/0430
Chesterfield Energy Corporation	Dominion Appalachian Development Properties	Assignment	312/0505
Dominion Appalachian Development Properties	CONSOL Gas Appalachian Development Properties	Name Change	0009/0124
CONSOL Gas Appalachian Development Properties	CONSOL Gas Reserves Inc	Merger	0009/0144
CONSOL Gas Reserves Inc	CONSOL Gas Company	Merger	0009/0156
CONSOL Gas Company	CNX Gas Company LLC	Name Change	0009/0206
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386
<b><u>Ralph J. Underwood et ux Lease (TM 15 PCL 7)</u></b>			
Ralph J. Underwood et ux	Chesterfield Energy Corporation	1/8+	0265/0430
Chesterfield Energy Corporation	Dominion Appalachian Development Properties	Assignment	312/0505
Dominion Appalachian Development Properties	CONSOL Gas Appalachian Development Properties	Name Change	0009/0124
CONSOL Gas Appalachian Development Properties	CONSOL Gas Reserves Inc	Merger	0009/0144
CONSOL Gas Reserves Inc	CONSOL Gas Company	Merger	0009/0156
CONSOL Gas Company	CNX Gas Company LLC	Name Change	0009/0206
CNX Gas Company LLC	Antero Resources Corporation	Agreement	0626/0386

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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.

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

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Roy L. Ullum et ux Lease (TM 15 PCL 32)</b>			
Roy L. Ullum et ux	Chesterfield Energy Corporation	1/8+	0265/0427
Chesterfield Energy Corporation	Dominion Appalachian Development Properties LLC	Assignment	0312/0505
Dominion Appalachian Development Properties LLC	CONSOL Gas Appalachian Development Properties LLC	Name Change	0009/0124
CONSOL Gas Appalachian Development Properties LLC	CONSOL Gas Reserves Inc	Merger	0009/0144
CONSOL Gas Reserves Inc	CONSOL Gas Company	Merger	0009/0156
CONSOL Gas Company	CNX Gas Company LLC	Name Change	0009/0206
CNX Gas Company LLC	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>
<b>Roy L. Ullum et ux Lease (TM 15 PCL 13)</b>			
Roy L. Ullum et ux	Chesterfield Energy Corporation	1/8+	0265/0427
Chesterfield Energy Corporation	Dominion Appalachian Development Properties LLC	Assignment	0312/0505
Dominion Appalachian Development Properties LLC	CONSOL Gas Appalachian Development Properties LLC	Name Change	0009/0124
CONSOL Gas Appalachian Development Properties LLC	CONSOL Gas Reserves Inc	Merger	0009/0144
CONSOL Gas Reserves Inc	CONSOL Gas Company	Merger	0009/0156
CONSOL Gas Company	CNX Gas Company LLC	Name Change	0009/0206
CNX Gas Company LLC	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>
<b>Edward Gregg et ux Lease</b>			
Edward Gregg et ux	JL Newman	1/8	0069/0172
JL Newman	The Philadelphia Company of WV	Assignment	0455/0390
The Philadelphia Company of WV	Pittsburgh & WV Gas Company	Assignment	0101/0031
Pittsburgh & WV Gas Company	Equitable Gas Company	Assignment	0132/0445
Equitable Gas Company	Equitrans Inc	Assignment	0274/0471
Equitrans Inc	EQT Capital Corporation	Merger	0433/0738
EQT Capital Corporation	Equitable Resources Inc	Merger	0433/0738
Equitable Resources Inc	Equitable Gas Company LLC	Merger	0433/0755
Equitable Gas Company LLC	Equitrans LP	Assignment	0433/0777
Equitrans LP	EQT Production Company	Agreement	0440/0107
EQT Production Company	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0653/0577</b>

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

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Clarence Hadley et ux Lease (TM 15 PCL 12)</b>			
Clarence Hadley et ux	Jack Burg	1/8	0264/0637
Jack Burg	Anvil Oil Company Inc	Agreement	0265/0055
Anvil Oil Company Inc	Anvil Oil & Gas Company Inc	Name Change	0001/0015
Anvil Oil & Gas Company Inc	Dominion Appalachian Development Inc	Assignment	0323/0383
Dominion Appalachian Development Inc	Dominion Appalachian Development LLC	Name Change	0001/0015
Dominion Appalachian Development LLC	Consol Gas Appalachian Development LLC	Name Change	0009/0131
Consol Gas Appalachian Development LLC	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Merger	0009/0206
CNX Gas Company LLC	Noble Energy Inc	Assignment	0388/0286
Noble Energy Inc	CNX Gas Company LLC	Assignment	0550/0273
CNX Gas Company LLC	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>
<b>Clarence Hadley et ux Lease (TM 15 PCL 14.1)</b>			
Clarence Hadley et ux	Jack Burg	1/8	0264/0637
Jack Burg	Anvil Oil Company Inc	Agreement	0265/0055
Anvil Oil Company Inc	Anvil Oil & Gas Company Inc	Name Change	0001/0015
Anvil Oil & Gas Company Inc	Dominion Appalachian Development Inc	Assignment	0323/0383
Dominion Appalachian Development Inc	Dominion Appalachian Development LLC	Name Change	0001/0015
Dominion Appalachian Development LLC	Consol Gas Appalachian Development LLC	Name Change	0009/0131
Consol Gas Appalachian Development LLC	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Merger	0009/0206
CNX Gas Company LLC	Noble Energy Inc	Assignment	0388/0286
Noble Energy Inc	CNX Gas Company LLC	Assignment	0550/0273
CNX Gas Company LLC	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>
<b>Emerson Laurence Moore et ux Lease</b>			
Emerson Laurence Moore et ux	Royal Resources Corporation	1/8	0190/0478
Royal Resources Corporation	Columbia Gas Transmission Corporation	Assignment	0191/0235
Columbia Gas Transmission Corporation	Anvil Oil Company Inc	Assignment	0265/0112
Anvil Oil Company Inc	Dominion Appalachian Development Inc	Assignment	0323/0383
Dominion Appalachian Development Inc	Dominion Appalachian Development LLC	Name Change	0009/0131
Dominion Appalachian Development LLC	Dominion Appalachian Development	Name Change	0009/0131
Dominion Appalachian Development	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company	Name Change	0009/0206
CNX Gas Company LLC	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>

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<b><u>Violet Gregg et al Lease</u></b>			
Violet Gregg et al	James F. Doan	1/8	0196/0238
James F. Doan	Anvil Oil Company Inc	Assignment	0254/0245
Anvil Oil Company Inc	Anvil Oil & Gas Company	Name Change	0009/0131
Anvil Oil & Gas Company	Dominion Appalachian Development Inc	Assignment	0323/0383
Dominion Appalachian Development Inc	Consol Gas Appalachian Development LLC	Name Change	0009/0131
Consol Gas Appalachian Development LLC	Consol Gas Reserves Inc	Merger	0009/0144
Consol Gas Reserves Inc	Consol Gas Company	Merger	0009/0156
Consol Gas Company	CNX Gas Company LLC	Name Change	0009/0206
<b>CNX Gas Company LLC</b>	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0636/0292</b>
<b><u>Eugene R. Hill et al Lease</u></b>			
Eugene R. Hill et al	Harvey K. Haymond	1/8	0247/0068
Harvey K. Haymond	J&J Enterprises Inc	Assignment	0248/0562
J&J Enterprises Inc	Eastern American Energy Corporation	Merger	0282/0296
Eastern American Energy Corporation	Seneca Upshur Petroleum Inc	Assignment	0254/0757
Seneca Upshur Petroleum Inc	Seneca Upshur Petroleum LLC	Assignment	0381/0540
Seneca Upshur Petroleum LLC	Antero Resources Appalachian Corporation	Assignment	0402/0132
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0557/0430
Antero Resources Corporation	CNX Gas Company LLC	Assignment	0468/0769
<b>CNX Gas Company LLC</b>	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>
<b><u>Sarah E. Doak et al Lease</u></b>			
Sarah E. Doak et al	Hope Natural Gas Company	1/8	0073/0138
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0169/0026
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0249/0287
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Name Change	0051/0795
CNG Transmission Corporation	Dominion Transmission Inc	Name Change	0210/0287
Dominion Transmission Inc	Consol Energy Holdings LLC	Merger	0384/0191
Consol Energy Holdings LLC	Consol Gas Company	Merger	0384/0191
Consol Gas Company	CNX Gas Company LLC	Merger	0384/0191
<b>CNX Gas Company LLC</b>	<b>Antero Resources Corporation</b>	<b>Agreement</b>	<b>0626/0386</b>

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WW-6A1  
(5/13)

Operator's Well No. Kilska Unit 1H

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>CNX Gas Company LLC Lease</u>	CNX Gas Company LLC	Antero Resources Corporation	1/8+	0628/0287

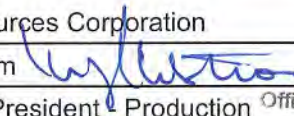
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**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

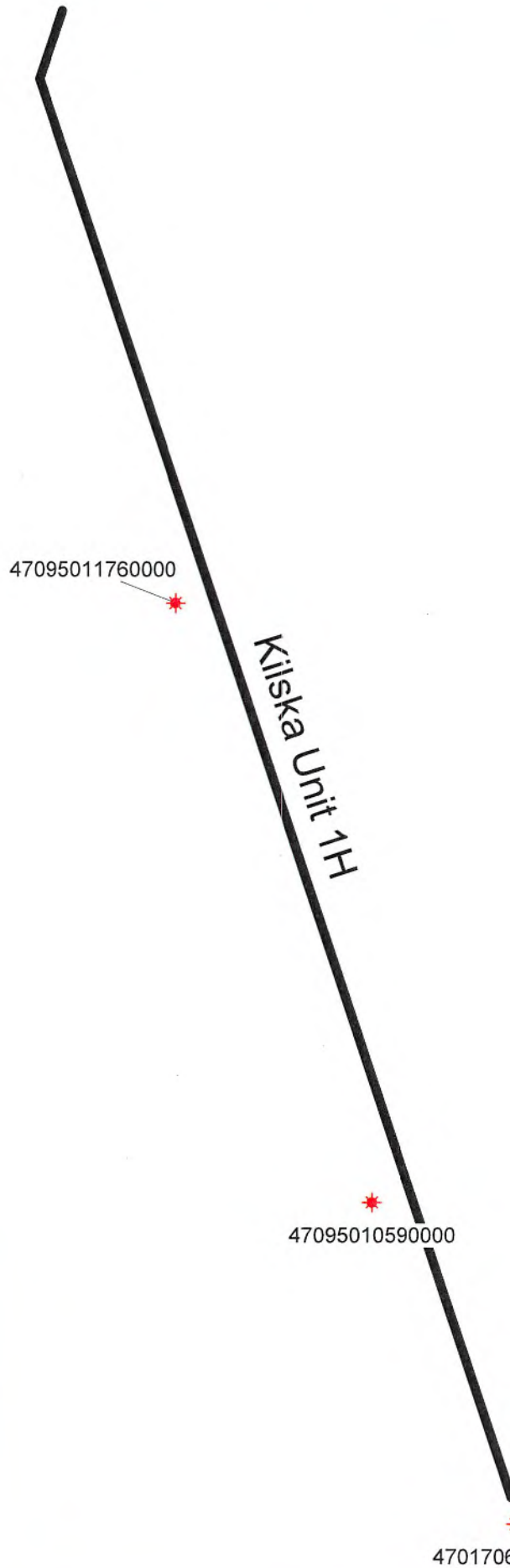
The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- 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.

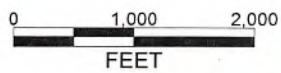
Well Operator: Antero Resources Corporation  
 By: Kevin Kilstrom  RECEIVED  
 Its: Senior Vice President Production Office of Oil and Gas

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 Page 1 of 1  
 WV Department of  
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Antero Resources Corporation

Kilska Unit 1H - AOR



WELL SYMBOLS  
Gas Well

December 3, 2018

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Environmental Protection

47017067920000

UWI (API Num)	Well Name	Well Number	Operator	Hist Oper	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47095011760000	HADLEY CLARENCE	1A	TRIAD HUNTER LLC	APPALACHIAN ENERGY	5,100	4519 - 4923	Riley, Benson	Big Injun, Weir, Alexander
47095010900000	HILL EUGENE & JACK	J-880	ALLIANCE PETR CORP	J & J ENTERPRISES	5,995	4595 - 5923	Riley, Benson, Alexander, Rhinestreet	Big Injun, Weir
47017067920000	ANTERO HAWK UNIT 1H	1H	ANTERO RESOURCES CORPORATION		21,040	6979 - 20938	Marcellus	

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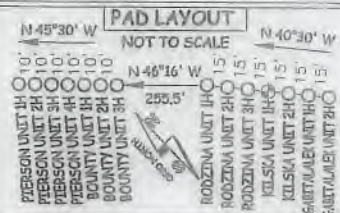
LATITUDE 39°25'00"

11,227'

Antero Resources Corporation Well No. Kilska Unit 1H

NOTES: WELL 1H TOP HOLE INFORMATION: N: 323,525ft E: 1,611,890ft LAT: 39°22'48.45" LON: 80°52'22.99" BOTTOM HOLE INFORMATION: N: 308,756ft E: 1,615,901ft LAT: 39°20'23.08" LON: 80°51'29.07" 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 1H TOP HOLE INFORMATION: N: 4,358,977m E: 510,948m BOTTOM HOLE INFORMATION: N: 4,354,498m E: 512,245m



LATITUDE 39°22'30"

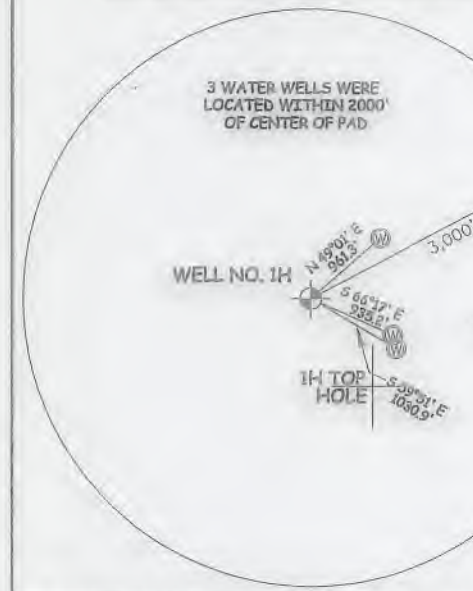
LONGITUDE 80°50'00"

12,841' TO BOTTOM HOLE

13,310'

Table listing landowners in Clay District - Ritchie County, WV. Includes names like Warren Suter Jr., Gary Dawson, Robert Sinclair, and various acreage amounts.

WV NORTH ZONE GRID NORTH



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.

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

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 14,300,364ft E: 1,676,289ft POINT OF ENTRY INFORMATION: N: 14,299,778ft E: 1,675,844ft BOTTOM HOLE INFORMATION: N: 14,285,669ft E: 1,680,544ft

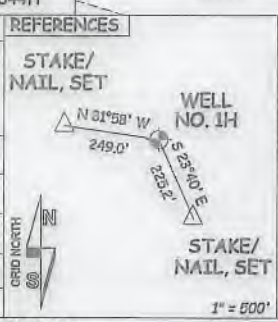


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 18-031WA DRAWING # KILSKA1HR2 SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND: Surface Owner Boundary Lines +/- Interior Surface Tracts +/- Existing Fence Found monument, as noted DATE 4/10/19 OPERATOR'S WELL# KILSKA UNIT 1H



Form with fields for Well Type (Oil, Gas, Liquid Injection, Waste Disposal), Production (Storage, Deep, Shallow), Location (Elevation, Watershed, District, County, Permit), Surface Owner (Gary D. Dawson et ux), Oil & Gas Royalty Owner (Antero Resources Corp.), Proposed Work (Drill, Convert, Drill Deeper, Redrill, Fracture or Stimulate, Plug off old formation, Perforate new formation), Target Formation (Marcellus), Well Operator (Antero Resources Corp.), Designated Agent (Dianna Stamper - CT Corporation System), Address (1615 Wynkoop St., Denver, CO 80202).

COUNTY NAME PERMIT

LATITUDE 39°25'00"

11,227'

6,998' TO BOTTOM HOLE

LATITUDE 39°22'30"

LONGITUDE 80°50'00"

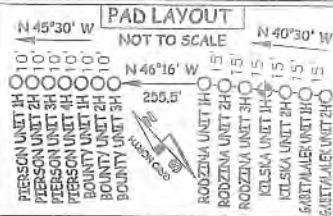
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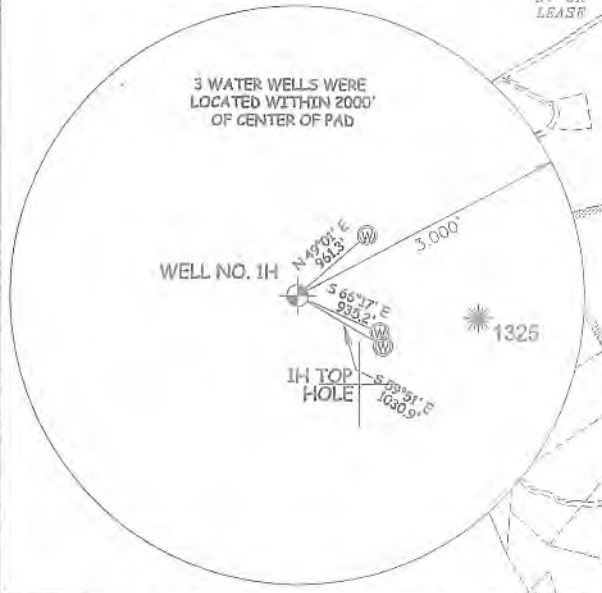
3 WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD

WELL NO. 1H

1H TOP HOLE

1H BOTTOM HOLE

Table listing landowners and lease information for the area. Includes names like Warren Stiker Jr., Gary Dawson, Robert Sinclair, etc.



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

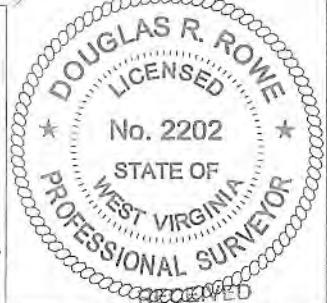
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Form with well details: WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 Office of Oil and Gas (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,009' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE SHIRLEY 7.5' (TH) WEST UNION 7.5' (BH) DISTRICT CENTERTVILLE COUNTY TYLER 08 2019 SURFACE OWNER GARY D. DAWSON ET UX ACREAGE 104.27 ACRES +/- OIL & GAS ROYALTY OWNER GARY D. DAWSON ET UX; COASTAL FOREST RESOURCES CO.; BRC MINERALS 1, LLC; LEASE ACREAGE 104.27 AC. +/- 100 AC. +/- 22 AC. +/- RALPH J. UNDERWOOD; RALPH J. UNDERWOOD; ROY L. ULLUM ET UX; ROY L. ULLUM ET UX; CLARENCE HADLEY ET UX; CLARENCE HADLEY ET UX; 57 AC. +/- 76 AC. +/- 30 AC. +/- 32 AC. +/- 176 AC. +/- 212 AC. +/- EDWARD GREGG ET UX; EMERSON LAURENCE MOORE ET UX; VIOLET GREGG ET AL; EUGENE R. HILL ET AL; SARAH E. DOAK ET AL; CNX GAS COMPANY, LLC 18 AC. +/- 168 AC. +/- 114 AC. +/- 22 AC. +/- 136 AC. +/- 7.6 AC. +/- PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD BHL PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,900' TVD 23,000' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313