

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

RECEIVED
Office of Oil and Gas
MAY 16 2024
West Virginia Department of
Environmental Protection

API 47-085-10496 County Ritchie District Union
Quad Oxford 7.5' Pad Name Cashew Pad Field/Pool Name *****
Farm name Elmer W. Pierce Well Number Allender Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4335897m Easting 512312m
Landing Point of Curve Northing 4336165.50m Easting 511584.78m
Bottom Hole Northing 4339626m Easting 510159m

Elevation (ft) 1019' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 7/17/2023 Date drilling commenced 8/10/2023 Date drilling ceased 11/20/2023
Date completion activities began 1/1/2024 Date completion activities ceased 3/5/2024
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 53', 184', 236' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1709', 1759', 1847' Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

Reviewed by: [Signature]
06/14/2024

API 47-085 - 10496 Farm name Elmer W. Pierce Well number Allender Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	28"	20"	130'	New	91.59#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	377'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2977'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	20994'	New	23#, P-110/ICY	N/A	Y
Tubing		2-3/8"	6708'		4.7#, P-110		
Packer type and depth set		N/A					

CEMEX
Oil and Gas
MAY 16 2024

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	218 sx	15.6	1.18	257	0'	8 Hrs.
Surface	Class C	325 sx	15.8	1.16	377	0'	8 Hrs.
Coal							
Intermediate 1	Class C	1156 sx	15.8	1.16	1341	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H		12.5 (Lead), 13.5(Tail)	1.53 (Tail)		-500' into Intermediate Casing	8 Hrs.
Tubing							

WOC
Environment
al Protection

Drillers TD (ft) 20994' MD, 6488' TVD (BHL), 6507' (Deepest Point Drilled) Loggers TD (ft) 20994' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5919'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

API 47- 085 - 10496 Farm name Elmer W. Pierce Well number Allender Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

06/14/2024

API 47- 085 - 10496 Farm name Elmer W. Pierce Well number Allender Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6377' (TOP)</u> TVD	<u>7072' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

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Office of Oil and Gas
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WV Department of Environmental Protection

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2176 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 12563 mcfpd Oil 193 bpd NGL --- bpd Water 671 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	
	<u>NAME</u>	<u>TVD</u>	<u>MD</u>	<u>MD</u>	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor H & P Drilling
Address 912 N Eagle Valley Rd City Howard State PA Zip 16841

Logging Company Baker Hughes
Address 168 E Main St City Bridgeport State WV Zip 26330

Cementing Company Halliburton Energy Services
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Stimulating Company Halliburton
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Carly Marvel Telephone 303-357-7373
Signature Carly Marvel Title Permitting Agent Date 5/8/2024

Submission of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

06/14/2024

LATITUDE 39°12'30"

6,890'

LATITUDE 39°12'30" 2,125' TO BOTTOM HOLE

937' TO BOTTOM HOLE LONGITUDE 80°52'30"

13,183'

LONGITUDE 80°50'00"

Antero Resources Corporation Well No. Allender 1H

Union District - Ritchie County	
9-9.1	Naomi Cunningham
9-9.4	John Louke
9-15	Marvin Osborne
9-15.1	Marvin Osborne
9-16	Marvin Osborne
9-18	Jack Guthrie Trust
9-19	Twila Eytts
9-20	Twila Eytts
9-20.1	Mark Morrison
9-20.2	Brian Bonner
9-21	Stephanie Knight
9-22	Stephanie Knight
9-23	Marvin Osborne
14-3.3	Mary Harms
14-4	Stephanie Knight
14-4.1	Stephanie Knight
14-11	Nathaniel Hendricks
14-11.6	Nathaniel Hendricks
14-11.7	Nathaniel Hendricks
14-11.8	Nathaniel Hendricks
14-17	Ralph Thacker
14-20	David Weekley
15-1	Timothy Alexander
15-1.1	Ralph Thacker
15-2	Ralph Thacker
15-3	Larry Gander
15-4	Stout Valley Trust
15-5	Larry Gander
15-6	Ralph Thacker
15-7	Stephanie Knight
15-8	Stephanie Knight
21-1	Ralph Thacker
21-2	Briar Fork Trust
21-3	Dallas Smith Et Al
21-4	Larry Gander
21-4.1	Joseph Bianchini
21-4.2	Marie Bianchini
21-4.3	Joseph Bianchini
21-5	James Beck Et Al
21-6	WF Smith
21-6.1	Lots Gander
21-7	Elmer Pierce
21-7.1	Larry Gander
21-7.2	Larry Gander
21-8.4	Brian Vanost
21-10	James Beck
21-10.1	Harvey Shepler
21-10.2	James Beck

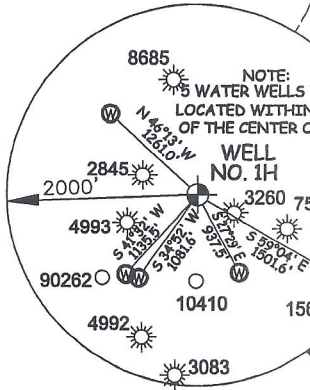
Southwest District - Doddridge County	
1-1	Jeffrey Polan
4-2	Cevasco Family Trust
4-10	James Webb
4-11	Juanita Leggett
4-14	Juanita Leggett
4-16	James Webb
4-18	James Webb
4-19.3	CNE Transmission Corp.
4-19.4	CNE Transmission Corp.
4-19.5	Dana Hurst
4-19.7	James Webb
4-19.8	James Webb
4-19.9	James Webb
4-21	Anthony Ayers
4-22	Reed Zinn
4-24	I L Morris
4-25	Tina Osborne
4-25.1	Stanley Chipps
4-28.3	Alfred Farley
4-31	Vicki Moore
4-31.2	Bradley Davis
4-34	Carl Ravin
8-1	Richard Brown
8-3	Randall Russell
8-4	John Gray Hrs
8-5	Larry Gander
12-1	David Bail

AS DRILLED DATA: 1H BOTTOM HOLE
 WELL 1H TOP HOLE INFORMATION:
 N: 247,711ft E: 1,615,102ft
 LAT: 39°10'19.66" LON: 80°51'27.50"
 BOTTOM HOLE INFORMATION:
 N: 260,067ft E: 1,608,243ft
 LAT: 39°12'20.74" LON: 80°52'57.00"
 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: 4,335,897m E: 512,312m
 BOTTOM HOLE INFORMATION:
 N: 4,339,626m E: 510,159m

(NAD) 27 (UTM) ZONE 17 COORDS:
 WELL 1H TOP HOLE INFORMATION:
 N: 14,224,641ft E: 1,680,764ft
 POINT OF ENTRY INFORMATION:
 N: 14,224,070ft E: 1,679,058ft
 BOTTOM HOLE INFORMATION:
 N: 14,236,877ft E: 1,673,702ft

- NOTE
1. 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.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



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

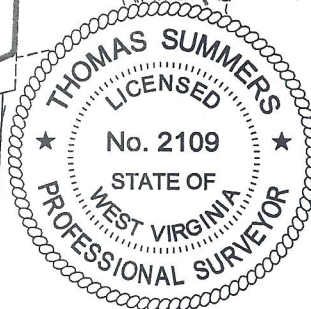
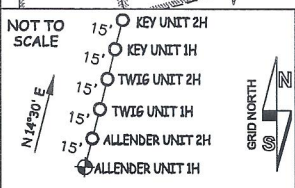
JOB # 12-121WA
 DRAWING # ALLENDER1HAD
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND
 - - - - - Surface Owner Boundary Lines +/-
 - - - - - Interior Surface Tracts +/-
 ⊗ Proposed Well Path
 ⊙ As Drilled Well Path

THOMAS SUMMERS P.S. 2109

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

DATE 05/07/24
 OPERATOR'S WELL# ALLENDER 1H



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 085 - 10496
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,019' -AS-BUILT WATERSHED SOUTH FORK HUGHES RIVER
 QUADRANGLE OXFORD 7.5' DISTRICT UNION COUNTY RITCHIE
 SURFACE OWNER ELMER W. PIERCE ACREAGE 67.78 ACRES +/- 06/14/2024
 OIL & GAS ROYALTY OWNER R.F. KIESTER ET AL LEASE ACREAGE 70 AC.±

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
 PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,488' TVD 20,994' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS
 ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAK BLVD.
 DENVER, CO 80202 BRIDGEPORT, WV 26330

API 47-085-10496 Farm Name Elmer W. Pierce Well Number Allender Unit 1H

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/1/2024	20866.8	20824.1	36	Marcellus
2	1/1/2024	20785.32917	20619.475	36	Marcellus
3	1/1/2024	20583.90417	20418.05	36	Marcellus
4	1/2/2024	20382.47917	20216.625	36	Marcellus
5	1/2/2024	20181.05417	20015.2	36	Marcellus
6	1/2/2024	19979.62917	19813.775	36	Marcellus
7	1/2/2024	19778.20417	19612.35	36	Marcellus
8	1/2/2024	19576.77917	19410.925	36	Marcellus
9	1/3/2024	19375.35417	19209.5	36	Marcellus
10	1/3/2024	19173.92917	19008.075	36	Marcellus
11	1/3/2024	18972.50417	18806.65	36	Marcellus
12	1/3/2024	18771.07917	18605.225	36	Marcellus
13	1/4/2024	18569.65417	18403.8	36	Marcellus
14	1/4/2024	18368.22917	18202.375	36	Marcellus
15	1/4/2024	18166.80417	18000.95	36	Marcellus
16	1/4/2024	17965.37917	17799.525	36	Marcellus
17	1/4/2024	17763.95417	17598.1	36	Marcellus
18	1/4/2024	17562.52917	17396.675	36	Marcellus
19	1/5/2024	17361.10417	17195.25	36	Marcellus
20	1/5/2024	17159.67917	16993.825	36	Marcellus
21	1/5/2024	16958.25417	16792.4	36	Marcellus
22	1/6/2024	16756.82917	16590.975	36	Marcellus
23	1/6/2024	16555.40417	16389.55	36	Marcellus
24	1/6/2024	16353.97917	16188.125	36	Marcellus
25	1/6/2024	16152.55417	15986.7	36	Marcellus
26	1/6/2024	15951.12917	15785.275	36	Marcellus
27	1/7/2024	15749.70417	15583.85	36	Marcellus
28	1/7/2024	15548.27917	15382.425	36	Marcellus
29	1/7/2024	15346.85417	15181	36	Marcellus
30	1/7/2024	15145.42917	14979.575	36	Marcellus
31	1/7/2024	14944.00417	14778.15	36	Marcellus
32	1/7/2024	14742.57917	14576.725	36	Marcellus
33	1/8/2024	14541.15417	14375.3	36	Marcellus
34	1/8/2024	14339.72917	14173.875	36	Marcellus
35	1/8/2024	14138.30417	13972.45	36	Marcellus
36	1/8/2024	13936.87917	13771.025	36	Marcellus
37	1/8/2024	13735.45417	13569.6	36	Marcellus
38	1/8/2024	13534.02917	13368.175	36	Marcellus
39	1/9/2024	13332.60417	13166.75	36	Marcellus
40	1/9/2024	13131.17917	12965.325	36	Marcellus
41	1/9/2024	12929.75417	12763.9	36	Marcellus
42	1/9/2024	12728.32917	12562.475	36	Marcellus
43	1/10/2024	12526.90417	12361.05	36	Marcellus
44	1/10/2024	12325.47917	12159.625	36	Marcellus
45	1/10/2024	12124.05417	11958.2	36	Marcellus
46	1/10/2024	11922.62917	11756.775	36	Marcellus
47	1/10/2024	11721.20417	11555.35	36	Marcellus
48	1/10/2024	11519.77917	11353.925	36	Marcellus
49	1/10/2024	11318.35417	11152.5	36	Marcellus
50	1/11/2024	11116.92917	10951.075	36	Marcellus
51	1/11/2024	10915.50417	10749.65	36	Marcellus
52	1/11/2024	10714.07917	10548.225	36	Marcellus
53	1/11/2024	10512.65417	10346.8	36	Marcellus
54	1/11/2024	10311.22917	10145.375	36	Marcellus
55	1/12/2024	10109.80417	9943.95	36	Marcellus
56	1/12/2024	9908.379167	9742.525	36	Marcellus
57	1/12/2024	9706.954167	9541.1	36	Marcellus
58	1/12/2024	9505.529167	9339.675	36	Marcellus
59	1/12/2024	9304.104167	9138.25	36	Marcellus
60	1/12/2024	9102.679167	8936.825	36	Marcellus
61	1/12/2024	8901.254167	8735.4	36	Marcellus
62	1/13/2024	8699.829167	8533.975	36	Marcellus
63	1/13/2024	8498.404167	8332.55	36	Marcellus
64	1/13/2024	8296.979167	8131.125	36	Marcellus
65	1/13/2024	8095.554167	7929.7	36	Marcellus
66	1/13/2024	7894.129167	7728.275	36	Marcellus
67	1/13/2024	7692.704167	7526.85	36	Marcellus
68	1/14/2024	7491.279167	7325.425	36	Marcellus
69	1/14/2024	7289.854167	7124	36	Marcellus

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06/14/2024

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	1/1/2024	81.8	9878.4	6328.7	3659.0	166340	5931.7	N/A
2	1/1/2024	87.9	9912.7	4472.3	3519.8	406360	7631.1	N/A
3	1/1/2024	94.2	10079.1	4082.5	3718.1	417360	7686.2	N/A
4	1/2/2024	95.9	10250.7	5294.5	4306.0	409940	7417.3	N/A
5	1/2/2024	92.4	10075.1	4534.3	4178.6	411880	7513.6	N/A
6	1/2/2024	92.6	10126.1	4977.9	3420.7	406133	7245.7	N/A
7	1/2/2024	91.2	10038.8	3251.4	3387.3	414840	7222.6	N/A
8	1/2/2024	96.5	10294.7	4196.6	3574.8	419680	7426.0	N/A
9	1/3/2024	96.5	10359.8	3683.2	3723.9	415300	7325.1	N/A
10	1/3/2024	94.9	10329.6	5350.7	3787.7	414320	7344.5	N/A
11	1/3/2024	92.1	9978.8	3349.8	3721.8	411620	7347.3	N/A
12	1/3/2024	96.9	10332.7	3510.8	3908.0	419940	7302.8	N/A
13	1/4/2024	97.2	10110.2	5094.1	3984.0	412240	7258.6	N/A
14	1/4/2024	97.7	10137.2	3747.4	3797.5	419180	7171.5	N/A
15	1/4/2024	93.3	10519.0	5275.1	3832.3	392800	7031.7	N/A
16	1/4/2024	97.4	10264.0	4221.3	3639.2	413360	7202.8	N/A
17	1/4/2024	96.7	9899.3	3376.9	4142.0	411660	7074.4	N/A
18	1/4/2024	97.8	10001.5	4446.9	4337.0	410400	7105.5	N/A
19	1/5/2024	96.9	9923.3	4085.8	4052.0	401340	7019.9	N/A
20	1/5/2024	97.2	9811.8	2956.3	3619.8	411220	7452.8	N/A
21	1/5/2024	95.1	10040.3	5201.5	3523.1	411200	7148.5	N/A
22	1/6/2024	96.0	9642.2	4837.2	3955.0	408340	7086.6	N/A
23	1/6/2024	96.9	9933.4	4392.2	3804.0	407560	6817.7	N/A
24	1/6/2024	97.6	9688.1	2798.5	3162.9	413660	6918.5	N/A
25	1/6/2024	94.9	9295.6	2629.4	3970.0	416480	8610.6	N/A
26	1/6/2024	96.6	9832.4	3280.4	3620.0	410400	7271.2	N/A
27	1/7/2024	97.4	9671.8	5265.6	3452.0	415540	7008.2	N/A
28	1/7/2024	97.5	9607.6	3670.4	3053.3	412700	6869.0	N/A
29	1/7/2024	97.1	9683.8	2773.4	3104.9	412520	6925.0	N/A
30	1/7/2024	97.1	9660.5	2907.9	2834.3	419000	6923.3	N/A
31	1/7/2024	94.8	9576.2	2384.8	3201.0	410900	7046.5	N/A
32	1/7/2024	95.8	9727.2	5407.0	2992.0	414000	7297.4	N/A
33	1/8/2024	97.0	9638.0	3513.0	3200.0	408020	7005.0	N/A
34	1/8/2024	96.7	9551.1	6402.4	3268.0	409240	7150.4	N/A
35	1/8/2024	97.9	9833.7	2217.0	3216.6	417680	7126.1	N/A
36	1/8/2024	97.9	9676.0	4715.8	3076.7	422220	7079.8	N/A
37	1/8/2024	97.9	9274.9	5084.1	3208.9	404700	6765.2	N/A
38	1/8/2024	97.6	9455.1	5809.0	3172.3	414520	6909.8	N/A
39	1/9/2024	96.3	9182.4	6719.4	3159.0	422100	6845.8	N/A
40	1/9/2024	96.4	9093.9	5961.8	2792.0	417500	6888.0	N/A
41	1/9/2024	96.1	9230.3	6436.8	2769.0	414200	6902.7	N/A
42	1/9/2024	97.0	9206.3	6721.1	3047.1	408400	6961.1	N/A
43	1/10/2024	96.9	9342.4	6458.4	3489.0	405200	7023.5	N/A
44	1/10/2024	97.0	9490.5	6509.3	3162.7	406180	6665.2	N/A
45	1/10/2024	96.6	9382.9	5184.0	2918.0	405300	6862.4	N/A
46	1/10/2024	93.9	9010.7	6113.1	3006.0	408420	7204.0	N/A
47	1/10/2024	95.5	8996.2	5887.7	2698.0	413600	7259.7	N/A
48	1/10/2024	97.6	9399.1	6765.1	2691.0	412900	6500.4	N/A
49	1/10/2024	98.2	8963.8	5035.9	3466.0	414040	6980.1	N/A
50	1/11/2024	96.3	9085.5	6736.4	3453.0	414180	6800.4	N/A
51	1/11/2024	96.9	9513.7	6213.8	3020.8	413540	6919.9	N/A
52	1/11/2024	96.4	9083.6	5809.8	2899.0	409280	6692.4	N/A
53	1/11/2024	96.5	8818.8	6446.3	3224.0	405060	6806.1	N/A
54	1/11/2024	97.0	8765.3	6349.2	3132.0	409920	6668.8	N/A
55	1/12/2024	96.7	8624.6	6286.4	2961.0	419720	6640.2	N/A
56	1/12/2024	97.7	9036.7	4765.7	3030.0	416720	6817.3	N/A
57	1/12/2024	96.1	9347.9	6376.3	2779.0	415280	6839.9	N/A
58	1/12/2024	97.8	8830.7	5419.7	2788.0	409880.0	6746.5	N/A
59	1/12/2024	98.0	8441.5	6186.8	3076.0	415740.0	6836.7	N/A
60	1/12/2024	97.8	8213.4	5955.2	3193.0	413680.0	6644.9	N/A
61	1/12/2024	98.4	8420.2	4152.3	2981.3	410800.0	6509.8	N/A
62	1/13/2024	97.1	8340.7	6231.0	3421.0	409520.0	6690.2	N/A
63	1/13/2024	94.7	8435.3	5308.3	3099.0	408420.0	6983.6	N/A
64	1/13/2024	96.0	8577.9	6524.5	3423.0	411820.0	6914.9	N/A
65	1/13/2024	97.0	8426.7	6236.1	2909.0	414640.0	6675.0	N/A
66	1/13/2024	97.4	8089.5	5947.4	3328.0	417160.0	6795.3	N/A
67	1/13/2024	96.2	8015.0	6495.5	2917.0	404780.0	6569.9	N/A
68	1/14/2024	97.1	7962.3	5867.1	3193.0	417340.0	6755.9	N/A
69	1/14/2024	96.4	8081.4	4480.8	3170.4	397940.0	6693.9	N/A
	AVERAGE	96	9,413	5,002	3,352	28,177,853	483,764	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandy Siltstone, tr LS	100	280	100	280
Sandy Siltstone, occ LS	280	430	280	430
Shaly Siltstone, tr SS	430	490	430	490
Shaly Siltstone, Coal	490	520	490	520
Shaly Siltstone, occ SS, tr Coal	520	610	520	610
Shaly Siltstone	610	730	610	730
Silty Shale, tr ls, coal	730	820	730	820
Sandy Shale, tr coal	820	970	820	970
Shaly Sandstone, tr coal	970	1,300	970	1,300
Sandy Shale, occ Siltstone	1,300	1,540	1,300	1,540
Silty Shale, occ sandstone	1,540	1,930	1,540	1,930
Shale, occ sandstone	1,930	1,849	1,930	1,918
Big Lime	1,879	2,394	1,918	2,496
Fifty Foot Sandstone	2,394	2,586	2,466	2,699
Gordon	2,586	2,863	2,669	2,988
Fifth Sandstone	2,863	2,958	2,958	3,087
Bayard	2,958	3,677	3,057	3,862
Speechley	3,677	3,826	3,832	4,021
Balltown	3,826	4,377	3,991	4,601
Bradford	4,377	4,796	4,571	5,038
Benson	4,796	5,037	5,008	5,290
Alexander	5,037	6,226	5,260	6,623
Sycamore	6,019	6,196	6,353	6,593
Middlesex	6,196	6,309	6,593	6,831
Burkett	6,309	6,356	6,831	6,981
Tully	6,356	6,377	6,981	7,072
Marcellus	6,377	NA	7,072	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/31/2023
Job End Date:	01/14/2024
State:	West Virginia
County:	Ritchie
API Number:	47-085-10496-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	ALLENDER UNIT 1H
Latitude:	39.172
Longitude:	-80.857
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6507
Total Base Water Volume (gal)*:	21444781
Total Base Non Water Volume:	0



Water Source	Percent
Produced Water	100.00%

Produced Water and Gas
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 Environmental Protection
 Department of Conservation

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
FDP-S1464-22	Halliburton	Friction Reducer					
HAI-501	Halliburton	Acid Corrosion Inhibitor					
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
MC B-8614A	MultiChem	Biocide					
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
Produced Water (Density 10.0)	Operator	Base Fluid					
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
WG-36 GELLING AGENT	Halliburton	Gelling Agent					

Items above are Trade Names. Items below are the individual ingredients.

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			Water	7732-18-5	100.00000	88.23871	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.59434	None
			Water	7732-18-5	100.00000	0.14359	None
			Hydrochloric acid	7647-01-0	30.00000	0.03304	None
			Complex amine compound	Proprietary	60.00000	0.02636	None
			Hydrotreated distillate	Proprietary	30.00000	0.01318	None
			Guar gum	9000-30-0	100.00000	0.00543	None
			Ammonium chloride	12125-02-9	5.00000	0.00220	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00220	None
			Fatty nitrogen derived amides	Proprietary	5.00000	0.00220	None
			Glutaraldehyde	111-30-8	30.00000	0.00213	None
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	1.00000	0.00044	None
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6	1.00000	0.00044	None
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00036	None
			Methanol	67-56-1	100.00000	0.00021	None
			Ammonium persulfate	7727-54-0	100.00000	0.00017	None
			Ethanol	64-17-5	1.00000	0.00007	None
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00006	None
			Modified thiourea polymer	Proprietary	30.00000	0.00006	None
			Oxylated phenolic resin	Proprietary	30.00000	0.00005	None
			Propargyl alcohol	107-19-7	5.00000	0.00001	None
			Hexadecene	629-73-2	5.00000	0.00001	None
			Ethoxylated alcohols	Proprietary	5.00000	0.00001	None
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	None

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

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Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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