

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

API 47-017-06935 County Doddridge District Grant
Quad Smithburg 7.5' Pad Name Lemley Pad Field/Pool Name -----
Farm name Brian D. Lemley & Christy M. Lemaster ET AL. Well Number Peter Unit 3H
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 4353030m Easting 527563m
Landing Point of Curve Northing 4353558.64m Easting 527909.67m
Bottom Hole Northing 4355488m Easting 527288m

Elevation (ft) 1304' 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 7/7/2022 Date drilling commenced 9/12/2022 Date drilling ceased 12/25/2022
Date completion activities began 2/13/2023 Date completion activities ceased 3/17/2023
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 357', 613', 856' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1460', 1673' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 980' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
IPK
12/08/2023

APPROVED

API 47-017 - 06935 Farm name Brian D. Lemley & Christy M. Lemaster ET AL. Well number Peter Unit 3H

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	24"	20"	130'	New	78.67#, X-60	N/A	Y
Surface	17-1/2"	13-3/8"	891'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3423'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15469'	New	20#, P-110-ICY	N/A	Y
Tubing		2-3/8"	7476'		4.7#, P-110		
Packer type and depth set		N/A					

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	195 sx	15.6	1.18	230	0'	8 Hrs.
Surface	Class A	1030 sx	15.8	1.16	1195	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1170 sx	15.8	1.16	1357	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	2410 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.26 (Tail)	3037	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15469' MD, 7253' TVD (BHL), 7255' (Deepest Point Drilled) Loggers TD (ft) 15469' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6609'

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 _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

12/08/2023

LATITUDE 39°20'00"

3,884'

LONGITUDE 80°40'00"

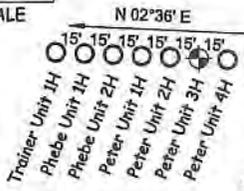
LONGITUDE 80°40'00"

Antero Resources Corporation Well No. Peter Unit 3H

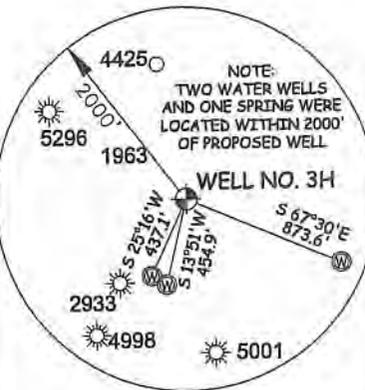
AS DRILLED DATA:
WELL 3H TOP HOLE INFORMATION:
 N: 303,096ft E: 1,666,086ft
 LAT: 39°19'34.16" LON: 80°40'49.42"
BOTTOM HOLE INFORMATION:
 N: 311,178ft E: 1,665,318ft
 LAT: 39°20'53.93" LON: 80°41'00.54"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH 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: 4,353,030m E: 527,563m
BOTTOM HOLE INFORMATION:
 N: 4,355,488m E: 527,288m

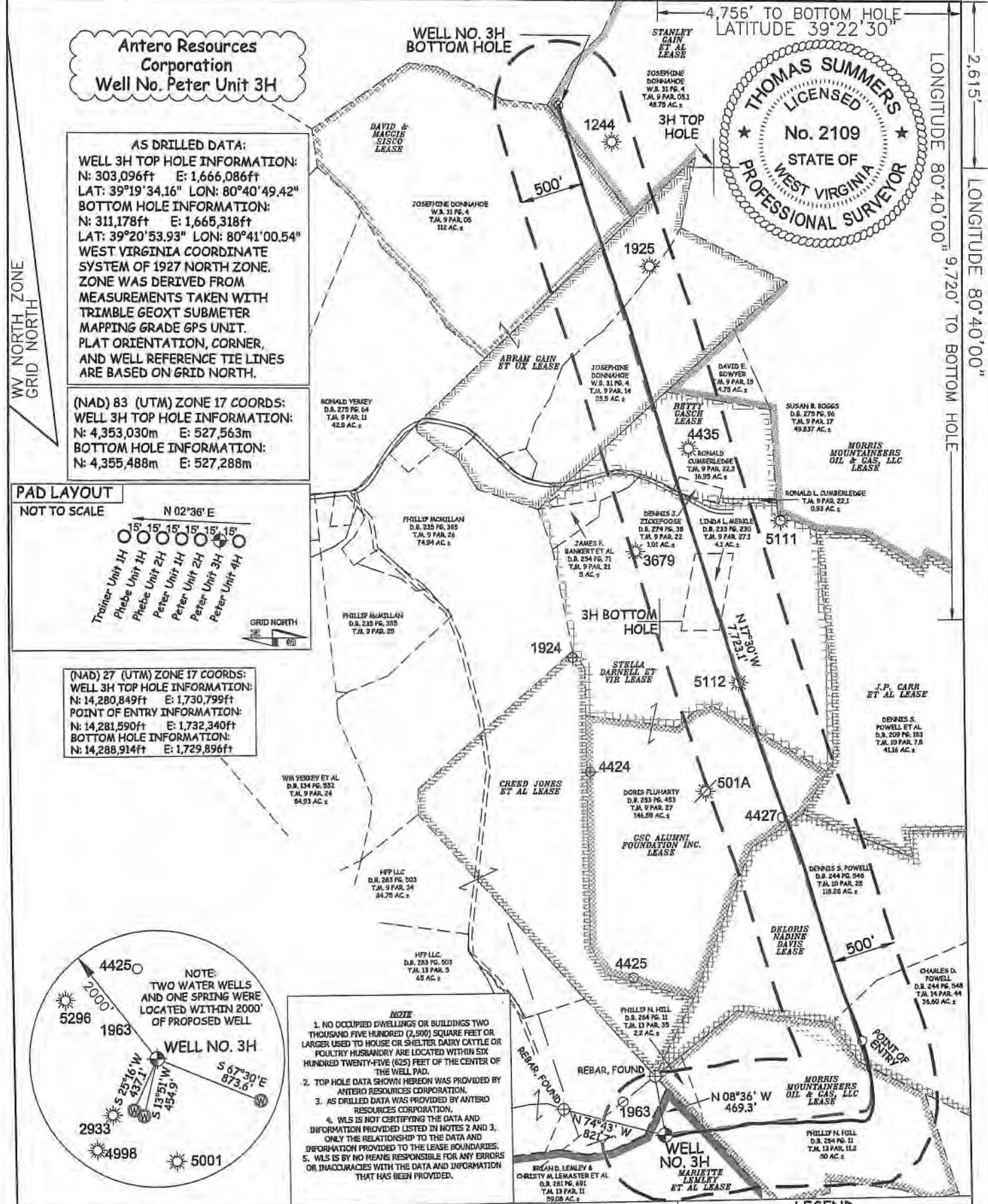
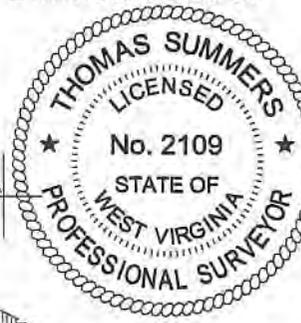
PAD LAYOUT NOT TO SCALE



(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 3H TOP HOLE INFORMATION:
 N: 14,280,849ft E: 1,730,799ft
POINT OF ENTRY INFORMATION:
 N: 14,281,590ft E: 1,732,340ft
BOTTOM HOLE INFORMATION:
 N: 14,288,914ft E: 1,729,896ft



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.



JOB # 13-012WA
 DRAWING # PETER3HAD
 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

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

THOMAS SUMMERS P.S. 2109
 DATE 05/09/23
 OPERATOR'S WELL # PETER UNIT #3H

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,304' AS BUILT WATERSHED MCELROY CREEK
 QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY BARBOUR
 SURFACE OWNER BRIAN D. LEMLEY & CHRISTY M. LEMASTER ET AL ACREAGE 59.08 ACRES +/-
 OIL & GAS ROYALTY OWNER MARIETTE LEMLEY ET AL; MORRIS MOUNTAINEERS OIL & GAS, LLC; DELORIS NADINE DAVIS; LEASE ACREAGE 66.87 AC±; 50 AC±; 158.4 AC±; GSC ALUMNI FOUNDATION INC.; STELLA DARNELL ET VIR; BETTY GASCH; ABRAM GAIN ET UX; DAVID & MAGGI SISCO; STANLEY GAIN ET AL 61.4 AC±; 112 AC±; 19.4 AC±; 85 AC±; 74 AC±; 48.75 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 7,253' TVD 15,469' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS
 ADDRESS 1615 WYNKOOP STREET ADDRESS 535 WHITE OAKS BLVD
 FORM WW-6 DENVER, CO 80202 BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

12/08/2023

API 47-017-06935 Farm Name Brian D. Lemley & Christy M. Lemaster ET AL Well Number Peter Unit 3H

Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/13/2023	15351	15310	60	Marcellus
2	2/13/2023	15272.90789	15109.4474	60	Marcellus
3	2/13/2023	15074.35526	14910.8947	60	Marcellus
4	2/13/2023	14875.80263	14712.3421	60	Marcellus
5	2/14/2023	14677.25	14513.7895	60	Marcellus
6	2/14/2023	14478.69737	14315.2368	60	Marcellus
7	2/14/2023	14280.14474	14116.6842	60	Marcellus
8	2/14/2023	14081.59211	13918.1316	60	Marcellus
9	2/14/2023	13883.03947	13719.5789	60	Marcellus
10	2/14/2023	13684.48684	13521.0263	60	Marcellus
11	2/15/2023	13485.93421	13322.4737	60	Marcellus
12	2/15/2023	13287.38158	13123.9211	60	Marcellus
13	2/15/2023	13088.82895	12925.3684	60	Marcellus
14	2/15/2023	12890.27632	12726.8158	60	Marcellus
15	2/15/2023	12691.72368	12528.2632	60	Marcellus
16	2/15/2023	12493.17105	12329.7105	60	Marcellus
17	2/15/2023	12294.61842	12131.1579	60	Marcellus
18	2/16/2023	12096.06579	11932.6053	60	Marcellus
19	2/16/2023	11897.51316	11734.0526	60	Marcellus
20	2/16/2023	11698.96053	11535.5	60	Marcellus
21	2/16/2023	11500.40789	11336.9474	60	Marcellus
22	2/17/2023	11301.85526	11138.3947	60	Marcellus
23	2/17/2023	11103.30263	10939.8421	60	Marcellus
24	2/17/2023	10904.75	10741.2895	60	Marcellus
25	2/17/2023	10706.19737	10542.7368	60	Marcellus
26	2/17/2023	10507.64474	10344.1842	60	Marcellus
27	2/17/2023	10309.09211	10145.6316	60	Marcellus
28	2/18/2023	10110.53947	9947.07895	60	Marcellus
29	2/18/2023	9911.986842	9748.52632	60	Marcellus
30	2/18/2023	9713.434211	9549.97368	60	Marcellus
31	2/18/2023	9514.881579	9351.42105	60	Marcellus
32	2/18/2023	9316.328947	9152.86842	60	Marcellus
33	2/18/2023	9117.776316	8954.31579	60	Marcellus
34	2/19/2023	8919.223684	8755.76316	60	Marcellus
35	2/19/2023	8720.671053	8557.21053	60	Marcellus
36	2/19/2023	8522.118421	8358.65789	60	Marcellus
37	2/19/2023	8323.565789	8160.10526	60	Marcellus
38	2/19/2023	8125.013158	7961.55263	60	Marcellus
39	2/19/2023	7926.460526	7763	60	Marcellus

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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	2/13/2023	78.3	8128.4	7080.51	4270.336	155560	187637	N/A
2	2/13/2023	93.8	8289.9	6494.11	4916.462	395360	298652	N/A
3	2/13/2023	95.3	8295.4	6192.69	4689.289	397150	287320	N/A
4	2/13/2023	95.6	8391.6	6570.21	4450.371	398070	280906	N/A
5	2/14/2023	94.3	8331.8	6610.88	4428.413	396300	272770	N/A
6	2/14/2023	91.9	8257.0	6453	4131	400910	277881	N/A
7	2/14/2023	95.6	8235.7	3824.31	4922.409	409700	283085	N/A
8	2/14/2023	92.9	8162.3	6207.62	5152.18	415170	278318	N/A
9	2/14/2023	93.3	8313.0	6285	5236	403690	274129	N/A
10	2/14/2023	95.0	8478.8	6229	5434.025	397790	271525	N/A
11	2/15/2023	96.8	8339.0	5794	5408	399560	274567	N/A
12	2/15/2023	97.1	8202.7	6019.15	5082.332	392920	270632	N/A
13	2/15/2023	96.2	8223.9	5985.75	5289.877	402780	269772	N/A
14	2/15/2023	96.6	8197.5	6192.98	5395.85	392980	272484	N/A
15	2/15/2023	96.2	8277.0	6039	5115	398690	267858	N/A
16	2/15/2023	96.2	8112.0	6117	5538	400130	271443	N/A
17	2/15/2023	97.1	8100.7	6130.47	5410.299	397260	271574	N/A
18	2/16/2023	96.0	8202.3	6187.83	5042.627	407960	271837	N/A
19	2/16/2023	93.9	7836.8	6066.25	5342.117	395270	290888	N/A
20	2/16/2023	98.2	8211.6	6188.11	5482.466	392440	296680	N/A
21	2/16/2023	98.1	8375.9	6155.86	5068.253	394700	271966	N/A
22	2/17/2023	97.7	8140.8	6627.51	5374.629	394720	266066	N/A
23	2/17/2023	98.0	8153.0	6484	4889	393680	271331	N/A
24	2/17/2023	97.3	8053.4	6689.71	5509.247	398320	288121	N/A
25	2/17/2023	96.3	8034.8	6900.4	5619.373	398400	267032	N/A
26	2/17/2023	96.7	7807.1	3423.78	5382.514	390840	266963	N/A
27	2/17/2023	96.7	7866.4	5733	5677.59	397340	267664	N/A
28	2/18/2023	97.1	7651.8	6086.66	5398.154	392960	265797	N/A
29	2/18/2023	98.0	7764.0	6338	5451	392790	271358	N/A
30	2/18/2023	92.8	7533.0	6299.08	5466.449	390860	253101	N/A
31	2/18/2023	96.7	7770.1	6625.76	5439.787	400220	268728	N/A
32	2/18/2023	96.8	8026.9	6309.16	5410.645	400530	265537	N/A
33	2/18/2023	98.3	7926.5	6555.51	4700.632	398240	267788	N/A
34	2/19/2023	83.3	8041.5	5913.7	4978.823	392620	355106	N/A
35	2/19/2023	98.1	7625.5	5959.73	5418.93	399130	269504	N/A
36	2/19/2023	97.3	7492.9	6038.83	5488.327	395370	263752	N/A
37	2/19/2023	96.6	7445.6	6139.17	4848.096	400700	268112	N/A
38	2/19/2023	97.2	7374.3	5658.17	5469.572	396750	265353	N/A
39	2/19/2023	96.9	7280.0	6515	3996	390880	268482	N/A
	AVERAGE	95	8,024	6,131	5,137	15,268,740	10,651,719	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
Sandstone, rr Siltstone	100	450	100	450
Silty Sandstone, tr Shale	450	510	450	510
Silty Sandstone, com Coal	510	630	510	630
Silty Sandstone	570	720	570	720
Sandstone, com LS	630	720	630	720
Silty Sandstone	720	780	720	780
Silty Sandstone, tr Shale	780	1,070	780	1,070
Sandstone, rr Siltstone	1,070	1,220	1,070	1,220
Silty Sandstone	1,220	1,520	1,220	1,520
Silty Sandstone, com Shale	1,520	1,670	1,520	1,670
Sandstone	1,670	1,770	1,670	1,770
Silty Sandstone, tr Shale	1,770	1,870	1,770	1,870
Sandstone, tr Coal	1,870	1,920	1,870	1,920
Sandstone	1,920	1,970	1,920	1,970
Silty Sandstone	1,970	2,117	1,970	2,156
Big Lime	2,147	2,728	2,156	2,798
Fifty Foot Sandstone	2,728	2,899	2,768	2,974
Gordon	2,899	3,233	2,944	3,319
Fifth Sandstone	3,233	3,306	3,289	3,394
Bayard	3,306	3,973	3,364	4,089
Speechley	3,973	4,209	4,059	4,335
Balltown	4,209	4,758	4,305	4,909
Bradford	4,758	5,236	4,879	5,407
Benson	5,236	5,519	5,377	5,705
Alexander	5,519	6,922	5,675	7,206
Sycamore	6,743	6,892	6,993	7,176
Middlesex	6,892	7,042	7,176	7,420
Burkett	7,042	7,072	7,420	7,477
Tully	7,072	7,158	7,477	7,711
Marcellus	7,158	NA	7,711	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:	2/13/2023
Job End Date:	2/19/2023
State:	West Virginia
County:	Doddridge
API Number:	47-017-06935-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Peter 3H
Latitude:	39.32616000
Longitude:	-80.68039000
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,255
Total Base Water Volume (gal):	11,010,471
Total Base Non Water Volume:	0



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
Fresh Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	85.54562	Density = 8.34
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.16257	

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HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
LEGEND(TM) LD-7750W	MultiChem	Scale Control					
				Listed Below			
Chemstream StimSTREAM FR 9750	Chemstream Oilfield Services	Friction Reducer					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			

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Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.						
			Crystalline silica, quartz	14808-60-7	100.00000	14.22425
			Hydrochloric acid	7647-01-0	30.00000	0.04333
			Distillates (petroleum), hydrotreated light	64742-47-8	25.00000	0.01565
			Methanol	67-56-1	100.00000	0.00728
			Guar gum	9000-30-0	100.00000	0.00461
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00313
			Glutaraldehyde	111-30-8	30.00000	0.00252
			Sodium chloride	7647-14-5	5.00000	0.00058
			Phosphoric Acid Salt	Proprietary	5.00000	0.00058
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00042
			Ammonium persulfate	7727-54-0	100.00000	0.00009
			Ethanol	64-17-5	1.00000	0.00008
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00008
			Modified thiourea polymer	Proprietary	30.00000	0.00008
			Oxylated phenolic resin	Proprietary	30.00000	0.00003
			Ethoxylated alcohols	Proprietary	5.00000	0.00001
			Hexadecene	629-73-2	5.00000	0.00001
			Propargyl alcohol	107-19-7	5.00000	0.00001
			Formaldehyde	50-00-0	0.10000	0.00001
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000

* 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%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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

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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