

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

API 47 - 085 - 10486 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Jackson Pad Field/Pool Name -----
Farm name Daniel R. Christian Well Number Maul 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 4348896m Easting 501425m
Landing Point of Curve Northing 4348268.59m Easting 500507.13m
Bottom Hole Northing 4343468m Easting 502171m

Elevation (ft) 1035' 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

RECEIVED
Office Of Oil and Gas

APR 30 2024

WV Department of
Environmental Protection

Date permit issued 5/30/2023 Date drilling commenced 6/7/2023 Date drilling ceased 8/31/2023
Date completion activities began 12/10/2023 Date completion activities ceased 2/13/2024
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 101, 192' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1703' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 665' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

Reviewed by:

J. R.

WR-35
Rev. 8/23/13

Page 2 of 4

API 47- 085 - 10486 Farm name Daniel R. Christian Well number Maul 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"	375'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3662'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	24658'	New	23#, P-110/ICY	N/A	Y
Tubing		2-3/8"	7255'		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	219 sx	15.6	1.18	258	0'	8 Hrs.
Surface	Class C	330 sx	15.8	1.16	383	0'	8 Hrs.
Coal							
Intermediate 1	Class C	1270 sx	15.8	1.16	1473	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	(Lead) sx (Tail)	13.5 (Lead), 15.2(Tail)	1.25 (Tail)		~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 24658' MD, 6325' TVD (BHL), 6338' (Deepest Point Drilled)

Loggers TD (ft) 24658' MD

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6414'

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

PERFORATION RECORD

***PLEASE SEE ATTACHED EXHIBIT 1**

RECEIVED
Office Of Oil and Gas

APR 30 2024

WV Department of
Environmental Protection

***PLEASE SEE ATTACHED EXHIBIT 2**

Please insert additional pages as applicable.

Well number Maul Unit 1H

DEPTHS

MD

OIL TEST ■ Flow □ Pump

OPEN FLOW Gas Oil NGL Water GAS MEASURED BY

_____ mcfpd _____ bpd --- bpd _____ bpd ☐ Estimated ☒ Orifice ☐ Pilot

DESCRIBE ROCK TYPE AND RECORD QUANTITY AND

TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)

***PLEASE SEE ATTACHED EXHIBIT 3**

[illegible]

Address 912 N Eagle Valley Rd City Howard State PA Zip 16841

Address 6500 West Fwy City Fort Worth State TX Zip 76116

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

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

Telephone 303-357-7373

Date 4/15/2024

Attach copy of FRACFOCUS Registry

LATITUDE 39°17'30"

7,163'

LATITUDE 39°15'00"

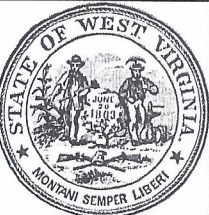
4,726' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Maul Unit 1H

Pennsboro Corporation	
6-01	Russell Lantham
09-05	Ritchie County Fairgrounds Inc.
09-06	Carl Short
09-18	Irvan Talkington Trust
10-01	JPE Hardwood Lumber Inc.
10-07	JPE Hardwood Lumber Inc.
11-01	David McCullough
11-02	Cardinal Gardens LTD Part
11-03	C&P Development Co. Inc.
11-04	Summit Community Bank Inc.
11-06	Central Communications Inc.
11-07	Samuel Cokley
11-36	Kim Edmisten
11-37	Brenda Edmisten
12-03	Frank Butler et al
15-02	Pennsboro Ind. Park Dev. Auth.
16-01	City of Pennsboro
16-02	Larry Horner Jr.
Clay District	
19-38.1	Karen Lee Gieball
19-38.2	Karen Lee Gieball
19-38.3	Karen Lee Gieball
19-38.4	Edgar Davis Jr.
19-39	Donald McCullough
19-39.1	Sandra Kay Northcraft
19-41.1	Edgar Davis Jr.
19-41.2	Joseph Davis
19-42	James Davis
19-44	Daniel R. Christian
19-44.1	Daniel R. Christian
19-44.2	Daniel R. Christian
25-01	Gale Tingler
25-1.1	Gale Tingler
25-02	Bess Hogue
25-03	John Davis
25-04	Donald McCullough
25-4.1	Donald McCullough
25-05	Penny McCullough
25-6.1	Seth Smith
25-6.2	David McCullough
25-6.4	WV DOT
25-08	Thurman McCullough
25-13	William Goff
25-13.1	Archie Carpenter, Jr.
25-28	Harry Shaffer
25-28.2	Harry Shaffer
25-28.3	Harry Shaffer
25-28.4	Harry Shaffer
25-29	Archie Carpenter, Jr.
25-29.1	Archie Carpenter, Jr.
25-29.2	William Goff
25-45.2	Dennis Markwith
25-45.3	Dennis Markwith
25-45.4	Dennis Markwith
30-02	William Birch
30-2.1	Harry Shaffer
30-2.2	Dennis Markwith
30-3.1	Donald Clay
30-4.1	Stonewall Property Holdings LLC
30-13	Randall Doll
30-14	Charles Copeland, Jr.
30-14.1	Charles Copeland, Jr.
30-21	Charles Copeland, Jr.
30-22	James Wilson, Jr. et al
30-25	Charles Copeland, Jr.
30-26	Joseph Wilson et al
30-27	Terry Fry
30-37.2	Terry Fry
30-38	David McCullough
30-42	James Wilson, Jr. et al
35-03	Marjorie Davis
35-04	E L LLC

- 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 # 23-006WA
DRAWING # MAUL1HAD
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 04/12/24
OPERATOR'S WELL# MAUL UNIT #1H

WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐ 47 - 085 - 10486
(IF "GAS") PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒ STATE COUNTY PERMIT
LOCATION: ELEVATION 1,035' AS BUILT WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5' (TOP HOLE) - PULLMAN 7.5' (BOTTOM HOLE) DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER DANIEL R. CHRISTIAN ACREAGE 17.36 ACRES +/-
OIL & GAS ROYALTY OWNER DANIEL R. CHRISTIAN ET UX LEASE ACREAGE 76.11 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 6,325' TVD 24,658' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS
ADDRESS 1615 WYNKOOP ST. ADDRESS 554 WHITE OAKS BLVD
DENVER, CO 80202 BRIDGEPORT, WV 26330

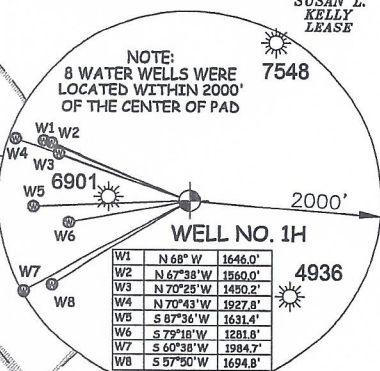
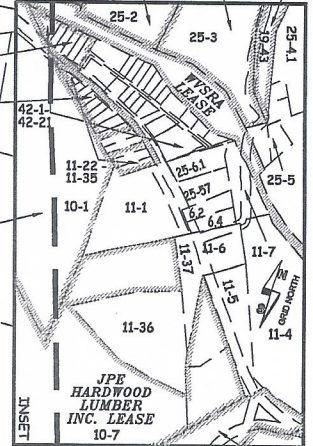
FORM WW-6

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 290,967ft E: 1,580,087ft
LAT: 39°17'21.68" LON: 80°59'01.12"
BOTTOM HOLE INFORMATION:
N: 273,111ft E: 1,582,236ft
LAT: 39°14'25.57" LON: 80°58'30.06"
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: 4,348,896m E: 501,425m
BOTTOM HOLE INFORMATION:
N: 4,343,468m E: 502,171m

(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
N: 14,267,291ft E: 1,645,045ft
POINT OF ENTRY INFORMATION:
N: 14,265,669ft E: 1,641,952ft
BOTTOM HOLE INFORMATION:
N: 14,249,480ft E: 1,647,490ft

PINEY KAREN LEE JOSEPH P.
HOLDINGS GIEBALL DAVIS ET
INC. LEASE LEASE UX LEASE



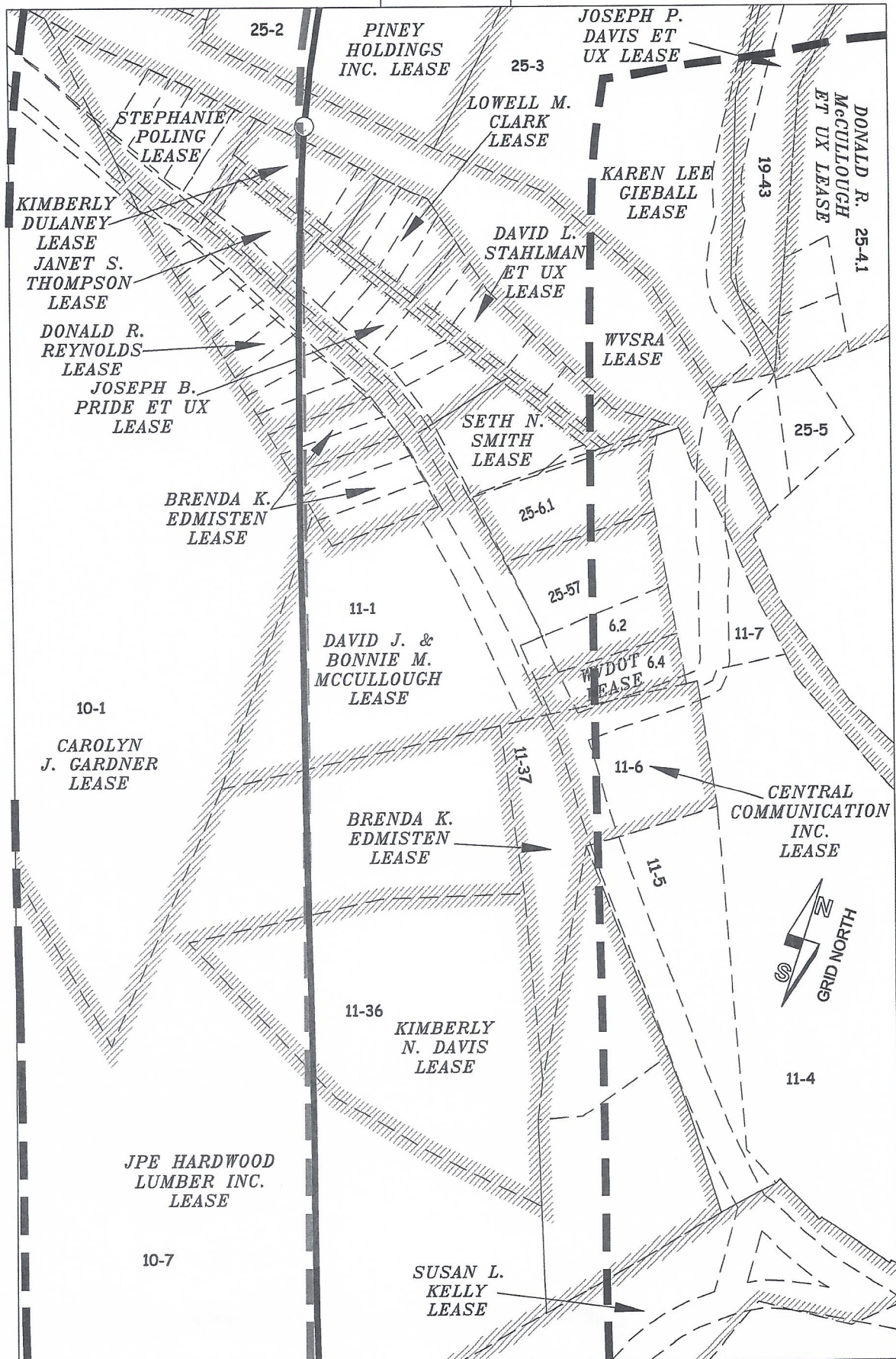
THOMAS SUMMERS
LICENSED
No. 2109
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR

NOT TO SCALE
GRID NORTH

COUNTY NAME

PERMIT

INSET



API 47-085-10486 Farm Name Daniel R. Christian Well Number Maul Unit 1H					
Exhibit 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12/10/2023	24531	24487	36	Marcellus
2	12/10/2023	24448.4127	24282.4762	36	Marcellus
3	12/11/2023	24246.88889	24080.9524	36	Marcellus
4	12/11/2023	24045.36508	23879.4286	36	Marcellus
5	12/11/2023	23843.84127	23677.9048	36	Marcellus
6	12/11/2023	23642.31746	23476.381	36	Marcellus
7	12/12/2023	23440.79365	23274.8571	36	Marcellus
8	12/12/2023	23239.26984	23073.3333	36	Marcellus
9	12/12/2023	23037.74603	22871.8095	36	Marcellus
10	12/13/2023	22836.22222	22670.2857	36	Marcellus
11	12/13/2023	22634.69841	22468.7619	36	Marcellus
12	12/13/2023	22433.1746	22267.2381	36	Marcellus
13	12/13/2023	22231.65079	22065.7143	36	Marcellus
14	12/13/2023	22030.12698	21864.1905	36	Marcellus
15	12/14/2023	21828.60317	21662.6667	36	Marcellus
16	12/14/2023	21627.07937	21461.1429	36	Marcellus
17	12/14/2023	21425.55556	21259.619	36	Marcellus
18	12/14/2023	21224.03175	21058.0952	36	Marcellus
19	12/15/2023	21022.50794	20856.5714	36	Marcellus
20	12/15/2023	20820.98413	20655.0476	36	Marcellus
21	12/16/2023	20619.46032	20453.5238	36	Marcellus
22	12/16/2023	20417.93651	20252	36	Marcellus
23	12/16/2023	20216.4127	20050.4762	36	Marcellus
24	12/17/2023	20014.88889	19848.9524	36	Marcellus
25	12/17/2023	19813.36508	19647.4286	36	Marcellus
26	12/17/2023	19611.84127	19445.9048	36	Marcellus
27	12/18/2023	19410.31746	19244.381	36	Marcellus
28	12/18/2023	19208.79365	19042.8571	36	Marcellus
29	12/18/2023	19007.26984	18841.3333	36	Marcellus
30	12/19/2023	18805.74603	18639.8095	36	Marcellus
31	12/19/2023	18604.22222	18438.2857	36	Marcellus
32	12/19/2023	18402.69841	18236.7619	36	Marcellus
33	12/19/2023	18201.1746	18035.2381	36	Marcellus
34	12/19/2023	17999.65079	17833.7143	36	Marcellus
35	12/20/2023	17798.12698	17632.1905	36	Marcellus
36	12/20/2023	17596.60317	17430.6667	36	Marcellus
37	12/21/2023	17395.07937	17229.1429	36	Marcellus
38	12/21/2023	17193.55556	17027.619	36	Marcellus
39	12/21/2023	16992.03175	16826.0952	36	Marcellus
40	12/22/2023	16790.50794	16624.5714	36	Marcellus
41	12/22/2023	16588.98413	16423.0476	36	Marcellus
42	12/23/2023	16387.46032	16221.5238	36	Marcellus
43	12/23/2023	16185.93651	16020	36	Marcellus
44	12/23/2023	15984.4127	15818.4762	36	Marcellus
45	12/23/2023	15782.88889	15616.9524	36	Marcellus
46	12/23/2023	15581.36508	15415.4286	36	Marcellus
47	12/24/2023	15379.84127	15213.9048	36	Marcellus
48	12/24/2023	15178.31746	15012.381	36	Marcellus
49	12/24/2023	14976.79365	14810.8571	36	Marcellus
50	12/24/2023	14775.26984	14609.3333	36	Marcellus
51	12/24/2023	14573.74603	14407.8095	36	Marcellus
52	12/24/2023	14372.22222	14206.2857	36	Marcellus
53	12/25/2023	14170.69841	14004.7619	36	Marcellus
54	12/25/2023	13969.1746	13803.2381	36	Marcellus
55	12/25/2023	13767.65079	13601.7143	36	Marcellus
56	12/26/2023	13566.12698	13400.1905	36	Marcellus
57	12/26/2023	13364.60317	13198.6667	36	Marcellus
58	12/27/2023	13163.07937	12997.1429	36	Marcellus
59	12/27/2023	12961.55556	12795.619	36	Marcellus
60	12/27/2023	12760.03175	12594.0952	36	Marcellus
61	12/28/2023	12558.50794	12392.5714	36	Marcellus
62	12/28/2023	12356.98413	12191.0476	36	Marcellus
63	12/28/2023	12155.46032	11989.5238	36	Marcellus
64	12/29/2023	11953.93651	11788	36	Marcellus
65	12/29/2023	11752.4127	11586.4762	36	Marcellus
66	12/29/2023	11550.88889	11384.9524	36	Marcellus
67	12/30/2023	11349.36508	11183.4286	36	Marcellus
68	12/30/2023	11147.84127	10981.9048	36	Marcellus
69	12/30/2023	10946.31746	10780.381	36	Marcellus
70	12/31/2023	10744.79365	10578.8571	36	Marcellus
71	12/31/2023	10543.26984	10377.3333	36	Marcellus
72	12/31/2023	10341.74603	10175.8095	36	Marcellus
73	12/31/2023	10140.22222	9974.28571	36	Marcellus
74	1/1/2024	9938.698413	9772.7619	36	Marcellus
75	1/1/2024	9737.174603	9571.2381	36	Marcellus
76	1/1/2024	9535.650794	9369.71429	36	Marcellus
77	1/1/2024	9334.126984	9168.19048	36	Marcellus
78	1/2/2024	9132.603175	8966.66667	36	Marcellus
79	1/2/2024	8931.079365	8765.14286	36	Marcellus
80	1/2/2024	8729.555556	8563.61905	36	Marcellus
81	1/2/2024	8528.031746	8362.09524	36	Marcellus
82	1/2/2024	8326.507937	8160.57143	36	Marcellus
83	1/3/2024	8124.984127	7959.04762	36	Marcellus
84	1/3/2024	7923.460317	7757.52381	36	Marcellus
85	1/3/2024	7721.936508	7556	36	Marcellus

RECEIVED
Office Of Oil and Gas
APR 30 2024
WV Department of
Environmental Protection

API 47-085-10486 Farm Name Daniel R. Christian Well Number Maul Unit 1H

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	12/10/2023	71.3	9250.334	7524.55	2896	165700	5356.3	N/A
2	12/10/2023	86.5	10631.72	4174.12	3176.682	414880	7791.5	N/A
3	12/11/2023	90.5	10454.2	4683.84	3585.769	418780	7385.8	N/A
4	12/11/2023	86.7	10125.64	5048.47	3366.602	413500	7611.1	N/A
5	12/11/2023	87.0	9912.119	5053.91	2774.131	419640	7637.9	N/A
6	12/11/2023	90.6	10416.13	4789.33	2847.202	420320	7124.2	N/A
7	12/12/2023	87.5	10013.56	5326.99	3740.644	419620	10742.9	N/A
8	12/12/2023	84.8	10002.74	4909.85	3517.604	416220	7617.3	N/A
9	12/12/2023	86.0	10205.94	4865.32	3406.167	418520	7648.7	N/A
10	12/13/2023	90.4	10084.19	4601.73	3107.031	419520	7299.3	N/A
11	12/13/2023	89.3	10131.02	3721.09	3302.019	413220	7257.1	N/A
12	12/13/2023	87.9	10065.17	4715.62	3316.814	415440	7569.7	N/A
13	12/13/2023	87.9	10097.18	4891.47	3247.529	417620	7595.9	N/A
14	12/13/2023	89.3	10353.98	4365.94	3140.139	417260	7304.4	N/A
15	12/14/2023	87.4	10078.97	4768.9	3546.516	416340	7782.1	N/A
16	12/14/2023	87.6	10057.65	4536.1	3630.234	409380	7554.3	N/A
17	12/14/2023	89.5	10033.18	4679.25	3522.379	417260	7459.6	N/A
18	12/14/2023	90.9	10013.56	4676.03	3354	417180	7464.0	N/A
19	12/15/2023	88.9	10093.08	3908.94	3408	413640	7616.5	N/A
20	12/15/2023	73.1	9060.347	4941.54	3725.623	415280	11006.6	N/A
21	12/16/2023	90.2	10079.27	2956.64	3144.178	422780	7579.1	N/A
22	12/16/2023	92.0	9859.297	4905.21	3598.431	414020	7280.0	N/A
23	12/16/2023	82.9	9622.571	4634.76	3535	418860	8078.7	N/A
24	12/17/2023	92.8	10130.12	4721.21	3183.589	394260	7112.6	N/A
25	12/17/2023	93.7	9971.772	4593.83	3204.631	419440	7545.4	N/A
26	12/17/2023	94.6	10226.5	4662.22	3102.53	415780	7113.2	N/A
27	12/18/2023	94.1	10040.85	4572.67	3162.549	422100	7416.5	N/A
28	12/18/2023	94.4	10012.66	4494.8	2943.696	419980	7370.6	N/A
29	12/18/2023	95.7	10072.38	4581.64	3269.309	421660	7208.4	N/A
30	12/19/2023	96.4	10070.23	4301.2	3320.933	417820	7208.7	N/A
31	12/19/2023	95.1	9621.785	4691.59	3454	417740	7118.6	N/A
32	12/19/2023	95.5	9976.017	4565.09	3643.385	412160	7638.5	N/A
33	12/19/2023	92.5	8996.545	4711.94	3330.697	417240	7392.6	N/A
34	12/19/2023	94.7	9577.54	4700.57	4003.951	421640	7382.8	N/A
35	12/20/2023	92.5	9928.128	4695.29	3350.381	416500	7418.4	N/A
36	12/20/2023	92.0	9319.811	4650.36	3365.936	408740	7289.2	N/A
37	12/21/2023	91.1	9137.98	3943.73	3028.313	418000	7332.0	N/A
38	12/21/2023	92.5	9533.562	4702.25	3224.112	416860	7226.1	N/A
39	12/21/2023	93.5	9229.471	4454.13	3271.586	415800	7293.2	N/A
40	12/22/2023	92.8	9660.912	4834.22	3333.165	412940	7365.2	N/A
41	12/22/2023	93.9	9467.004	4629.7	3414.178	414960	8893.6	N/A
42	12/23/2023	93.4	9368.796	4721.32	3445.122	417660	7270.9	N/A
43	12/23/2023	93.5	9428.885	4607.41	3066.251	427000	7365.9	N/A
44	12/23/2023	91.2	9029.056	4527.84	3215.16	419940	7092.9	N/A
45	12/23/2023	92.4	9018.676	4440.04	3676	414900	7122.7	N/A
46	12/23/2023	93.1	9207.362	4539.44	3927.159	419000	7596.1	N/A
47	12/24/2023	93.6	9222.195	4469.28	3566.434	419400	7590.4	N/A
48	12/24/2023	92.7	8825.382	4562.24	3925.613	417980	7498.6	N/A
49	12/24/2023	93.5	9058.608	4493.59	3871.308	415280	7338.0	N/A
50	12/24/2023	93.1	8824.982	4614.8	4109	417640	7450.8	N/A
51	12/24/2023	93.5	8942.201	4592.26	4067.004	419960	7676.5	N/A
52	12/24/2023	94.1	9004.346	4685.47	3925	418820	7399.5	N/A
53	12/25/2023	94.6	9049.834	4705.14	3972.867	411860	7322.1	N/A
54	12/25/2023	94.5	8775.253	5054.6	3914.085	419340	7357.0	N/A
55	12/25/2023	93.7	8658.083	4651.2	3719.558	417180	7193.6	N/A
56	12/26/2023	93.9	8492.294	2822.61	3953.043	419280	7180.5	N/A
57	12/26/2023	94.6	8789.873	4676.43	3750.456	419080	7390.6	N/A
58	12/27/2023	94.2	8647.0	4787.9	3882.0	413600.0	7379.2	N/A
59	12/27/2023	94.8	8716.5	3175.7	3970.4	412360.0	7196.4	N/A
60	12/27/2023	95.0	8532.9	4690.4	4125.1	419820.0	7352.7	N/A
61	12/28/2023	94.6	8632.9	4667.2	4075.0	414580.0	7139.6	N/A
62	12/28/2023	93.9	8450.5	4692.2	3980.4	413800.0	7431.9	N/A
63	12/28/2023	95.0	8859.3	4894.0	3848.5	414180.0	7155.4	N/A
64	12/29/2023	93.8	8330.1	4515.1	3952.2	409200.0	7015.3	N/A
65	12/29/2023	94.9	8504.0	4559.9	4207.6	420780.0	7129.1	N/A
66	12/29/2023	93.6	8157.6	4784.5	4210.1	414320.0	7184.6	N/A
67	12/30/2023	95.3	8760.1	4855.2	3997.5	414220.0	7043.6	N/A
68	12/30/2023	94.3	8748.0	4680.3	3831.8	408640.0	7011.6	N/A
69	12/30/2023	95.2	8443.6	4792.8	3740.7	411140.0	6866.3	N/A
70	12/31/2023	95.2	8578.8	4636.9	3724.6	411600.0	6834.4	N/A
71	12/31/2023	94.7	8388.4	3445.8	3742.4	410660.0	6638.6	N/A
72	12/31/2023	94.3	8155.5	4541.3	3615.3	415020.0	6739.9	N/A
73	12/31/2023	95.6	8607.2	4879.7	3654.4	413240.0	6992.6	N/A
74	1/1/2024	95.4	8087.0	4525.8	3708.3	413820.0	6716.5	N/A
75	1/1/2024	94.5	8076.0	3184.6	3726.9	416360.0	6688.6	N/A
76	1/1/2024	95.2	7892.0	3357.9	3638.3	412960.0	6787.3	N/A
77	1/1/2024	95.6	7955.8	4718.3	3548.1	410000.0	6878.0	N/A
78	1/2/2024	92.9	7895.5	4608.0	3627.0	407600.0	7816.4	N/A
79	1/2/2024	95.4	7951.7	5019.8	3703.7	414100.0	6775.4	N/A
80	1/2/2024	94.4	8111.7	4890.7	3706.0	411500.0	6639.8	N/A
81	1/2/2024	95.1	7815.4	3494.1	3937.0	409120.0	6697.5	N/A
82	1/2/2024	94.5	7845.7	4687.7	3813.1	409560.0	6618.4	N/A
83	1/3/2024	94.3	7713.7	4848.2	3733.4	417100.0	6714.1	N/A
84	1/3/2024	94.2	7871.6	4947.2	3910.8	413820.0	6659.9	N/A
85	1/3/2024	95.2	7961.5	5213.6	3448.5	409540.0	6695.2	N/A
AVERAGE		92	9,187	4,582	3,572	35,075,560	623,733	TOTAL

RECEIVED
Office Of Oil and Gas

APR 30 2024

WV Department of
Environmental Protection

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	120	200	120	200
Shale	200	340	200	340
Siltstone/ Shale	340	380	340	380
Trace Coal	380	640	380	640
Siltstone	640	610	640	610
Shaly Siltstone	610	760	610	760
Shale/ Limestone	760	800	760	800
Siltstone	800	980	800	980
Shale/ limestone	980	1,240	980	1,240
Siltstone/ shale	1,240	1,340	1,240	1,340
Sandstone	1,340	1,560	1,340	1,560
Sandstone	1,560	1,901	1,560	2,079
Big Lime	1,931	2,756	2,079	3,093
Fifty Foot Sandstone	2,756	2,908	3,063	3,272
Gordon	2,908	3,239	3,242	3,659
Fifth Sandstone	3,239	3,278	3,629	3,704
Bayard	3,278	3,841	3,674	4,393
Speechley	3,841	4,042	4,363	4,636
Balltown	4,042	4,469	4,606	5,148
Bradford	4,469	4,871	5,118	5,634
Benson	4,871	5,149	5,604	5,969
Alexander	5,149	6,148	5,939	7,227
Sycamore	6,028	6,118	7,061	7,197
Middlesex	6,118	6,219	7,197	7,399
Burkett	6,219	6,246	7,399	7,474
Tully	6,246	6,255	7,474	7,504
Marcellus	6,255	NA	7,504	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.

RECEIVED
Office Of Oil and Gas
APR 30 2024
WV Department of
Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/10/2023
Job End Date:	01/03/2024
State:	West Virginia
County:	Ritchie
API Number:	47-085-10486-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	MAUL UNIT 1H
Latitude:	39.2894
Longitude:	-80.9834
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6337
Total Base Water Volume (gal)*:	27892897
Total Base Non Water Volume:	0



Water Source	Percent
Produced Water	100.00%

RECEIVED
Office Of Oil and Gas

APR 30 2024

WV Department of
Environmental Protection

RECEIVED
Office Of Oil and Gas

APR 30 2024

WV Department of
Environmental Protection

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.

			Water	7732-18-5	100.00000	88.65358	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.14829	None
			Water	7732-18-5	100.00000	0.16837	None
			Hydrochloric acid	7647-01-0	30.00000	0.03939	None
			Complex amine compound	Proprietary	60.00000	0.03013	None
			Hydrotreated distillate	Proprietary	30.00000	0.01506	None
			Guar gum	9000-30-0	100.00000	0.00924	None
			Ammonium chloride	12125-02-9	5.00000	0.00251	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00251	None
			Fatty nitrogen derived amides	Proprietary	5.00000	0.00251	None
			Glutaraldehyde	111-30-8	30.00000	0.00209	None
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	1.00000	0.00050	None
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6	1.00000	0.00050	None
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00035	None
			Methanol	67-56-1	100.00000	0.00025	None
			Ammonium persulfate	7727-54-0	100.00000	0.00022	None
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	None
			Modified thiourea polymer	Proprietary	30.00000	0.00007	None
			Ethanol	64-17-5	1.00000	0.00007	None
			Oxylated phenolic resin	Proprietary	30.00000	0.00007	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.

RECEIVED
Office Of Oil and Gas
APR 30 2024
WV Department of
Environmental Protection

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

RECEIVED
Office Of Oil and Gas

APR 30 2024

U.S. Department of
Environmental Protection