

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

API 47-095-02660 County Tyler District McElroy  
Quad Shirley 7.5' Pad Name Colorado West Field/Pool Name ---  
Farm name Antero Resources Corporation Well Number Bronco 1H  
Operator (as registered with the OOG) Antero Resources Corporation  
Address 1615 Wynkoop St 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 4361448m Easting 518132m  
Landing Point of Curve Northing 518679.96m Easting 4361775.88m  
Bottom Hole Northing 4364929m Easting 517673m

Elevation (ft) 749' 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 11/7/2019 Date drilling commenced 1/23/2020 Date drilling ceased 3/7/2020  
Date completion activities began 3/10/2021 Date completion activities ceased 4/13/2021  
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 298 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 916 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**APPROVED**

Reviewed by: [Signature]  
3/16/23  
**06/09/2023**

API 47-095 - 02660 Farm name Antero Resources Corporation Well number Bronco 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	24"	20"	105'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	446'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3205'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	18167'	New	20#, P-110	N/A	Y
Tubing		2-3/8"	7011'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	284 sx	15.6	1.20	60	0	8 Hrs
Surface	Class A	353 sx	15.6	1.20	76	0	8 Hrs
Coal							
Intermediate 1	Class A	1036 sx	15.6	1.20	220	0	8 Hrs
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 2762 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.26 (Tail)	619	-500' into Intermediate Casing	8 Hrs
Tubing							

Drillers TD (ft) 18186' MD, 6450' TVD (BHL), 6454' (Deepest Point Drilled) Loggers TD (ft) 18186' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6100'

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 ever 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 on 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 \_\_\_\_\_

06/09/2013  
 J. Proby  
 3/16/23

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PERFORATION RECORD

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

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)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								

Please insert additional pages as applicable.

*JMcb*  
*3/16/23*  
**06/09/2023**

API 47- 095 - 02660 Farm name Antero Resources Corporation Well number Bronco 1H

PRODUCING FORMATION(S)	DEPTHS	
<u>Marcellus</u>	<u>6396' (TOP)</u> TVD	<u>7046' (TOP)</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 7600 mcfpd Oil 94 bpd NGL --- bpd Water 521 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
<b>*PLEASE SEE ATTACHED EXHIBIT 3</b>					

Please insert additional pages as applicable.

Drilling Contractor Patterson Drilling Company  
Address 10713 West Sam Houston Parkway North City Houston State TX Zip 77064

Logging Company Nine Energy Services  
Address 6500 West Fwy City Fort Worth State TX Zip 76116

Cementing Company Schlumberger Oilfield Services  
Address 300 Schlumberger Dr City Sugerland State TX Zip 77478

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 2/7/2023

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

06/09/2023  
*[Handwritten signature]*  
*[Handwritten date]*

LATITUDE 39°25'00"

11,184'

891' TO BOTTOM HOLE  
LATITUDE 39°27'30"

Antero Resources Corporation  
Well No. Bronco Unit 1H

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 331,238ft E: 1,635,599ft  
LAT: 39°24'08.15" LON: 80°47'22.48"  
BOTTOM HOLE INFORMATION:  
N: 342,687ft E: 1,634,282ft  
LAT: 39°26'01.11" LON: 80°47'41.36"  
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:  
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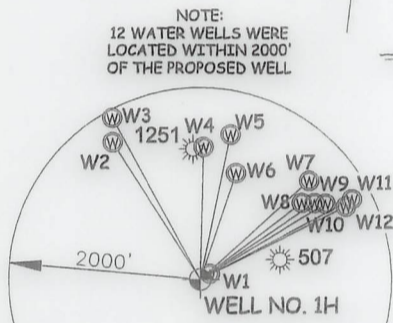
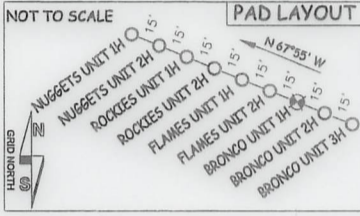
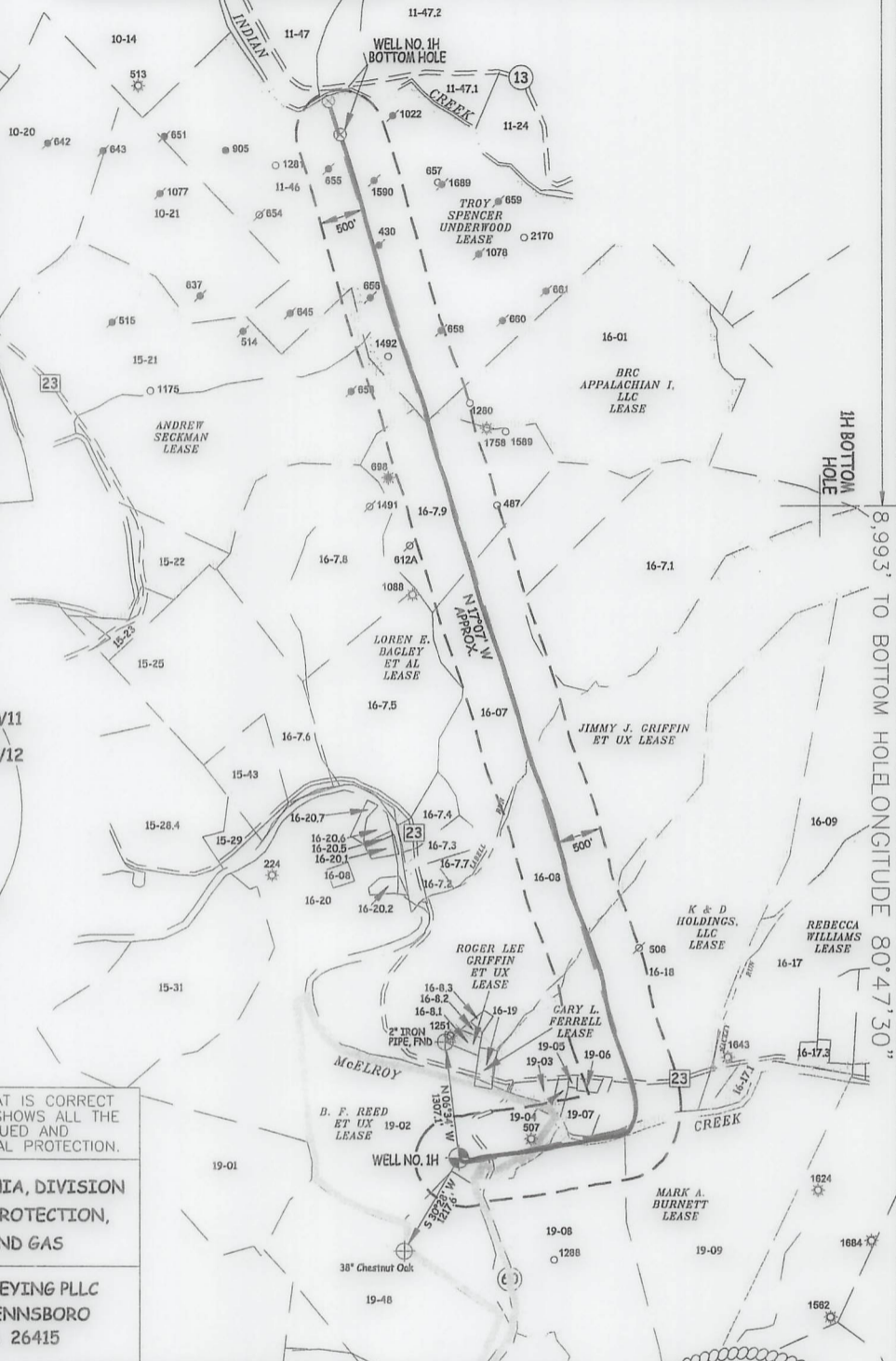


Table with 2 columns: Well ID and Coordinates (N, E, W, S).  
W1 N 58°50' E 116.6'  
W2 N 32°31' W 1696.8'  
W3 N 28°31' W 1919.4'  
W4 N 01°31' E 1383.8'  
W5 N 11°55' E 1546.2'  
W6 N 18°37' E 1174.6'  
W7 N 47°54' E 1539.8'  
W8 N 53°04' E 1332.1'  
W9 N 56°18' E 1437.9'  
W10 N 58°55' E 1531.8'  
W11 N 62°11' E 1796.0'  
W12 N 63°28' E 1703.7'

Table with 6 columns: TM-Par, Surface Owner, Well ID, Surface Owner, Well ID, Surface Owner, Well ID, Surface Owner, Well ID, Surface Owner, Well ID, Surface Owner.  
10-14 Charlene Garrison  
10-20 Kenneth Mason  
10-21 Kenneth Mason  
11-24 Bobby Thomas  
11-46 Alva Spencer Est.  
11-47 Jay Bee Oil & Gas Inc.  
11-47.1 James Canter Sr.  
11-47.2 Everett Stanley  
15-21 Robert Jennings  
15-22 Joe Kimball  
15-23 Kenneth Kline  
15-25 William Roberts  
15-28.4 George Hamilton  
15-29 Mitchell Herrick  
15-31 Roger Weese  
15-43 Robert Kocher  
16-01 Donald VanDine Jr.  
16-07 Robert Kocher  
16-7.1 Donald Moore  
16-7.2 Donna Brumbaugh  
16-7.3 Mary Blattner  
16-7.4 Donald Moore  
16-7.5 Robert Kocher  
16-7.6 Robert Kocher  
16-7.7 Robert Kocher  
16-7.8 Blattner & Howard LLC  
16-7.9 Mary Blattner  
16-08 June Griffin  
16-8.1 Roger Griffin  
16-8.2 Roger Griffin  
16-8.3 Brian Eddy  
16-09 Jamie Straight  
16-17 Charles Straight  
16-17.1 Charles Straight  
16-17.2 Rodney Tippins  
16-17.3 Charles Kimball  
16-20 Susan Spencer  
16-20.1 Susan Spencer  
16-20.2 Gary Nichols  
16-20.3 Gary Nichols  
16-20.5 Susan Spencer  
16-20.6 Timothy Spencer  
16-20.7 Timothy Spencer  
19-01 Susan Spencer  
19-02 Antero Resources Corp.  
19-03 Larry Stevens  
19-04 John Owens  
19-05 John Lewis Jr.  
19-06 Paul Weakley  
19-07 Patricia Montgomery  
19-08 John Lewis Jr.  
19-09 Robert Walsh  
19-48 Lloyd Talkington



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.

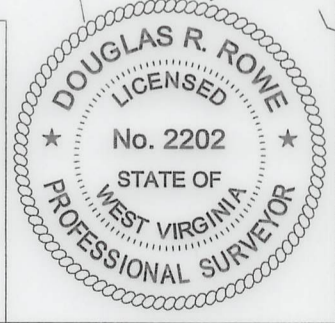


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 19-006WA  
DRAWING # BRONCO1HAD  
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 +/-  
- Proposed Well Path  
- As Drilled Well Path  
DOUGLAS R. ROWE P.S. 2202  
DATE 09/14/20  
OPERATOR'S WELL# BRONCO UNIT #1H

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.



WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 02660  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT  
LOCATION: ELEVATION 749' - AS BUILT WATERSHED McELROY CREEK DISTRICT McELROY COUNTY TYLER  
QUADRANGLE SHIRLEY 7.5' COUNTY NAME  
SURFACE OWNER ANTERO RESOURCES CORPORATION ACREAGE 127.86 ACRES +/-  
OIL & GAS ROYALTY OWNER B.F. REED ET UX; MARK A. BURNETT; K & D HOLDINGS, LLC; LEASE ACREAGE 130 AC.±; 256 AC.±; 219.39 AC.±;  
JIMMY J. GRIFFIN ET UX; LOREN E. BAGLEY ET AL; TROY SPENCER UNDERWOOD 236 AC.±; 502.8 AC.±; 257 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 6,450' TVD 18,186' 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

5,246' LONGITUDE 80°45'00"

8,993' TO BOTTOM HOLE LONGITUDE 80°47'30"

06/09/2023

LATITUDE 39°25'00"

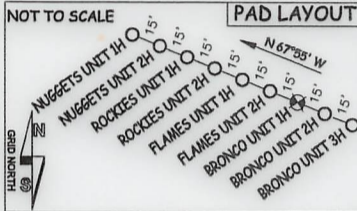
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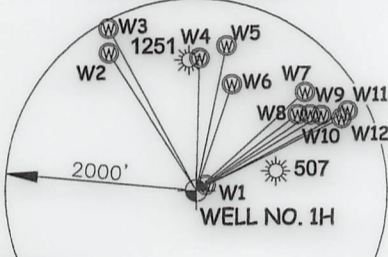
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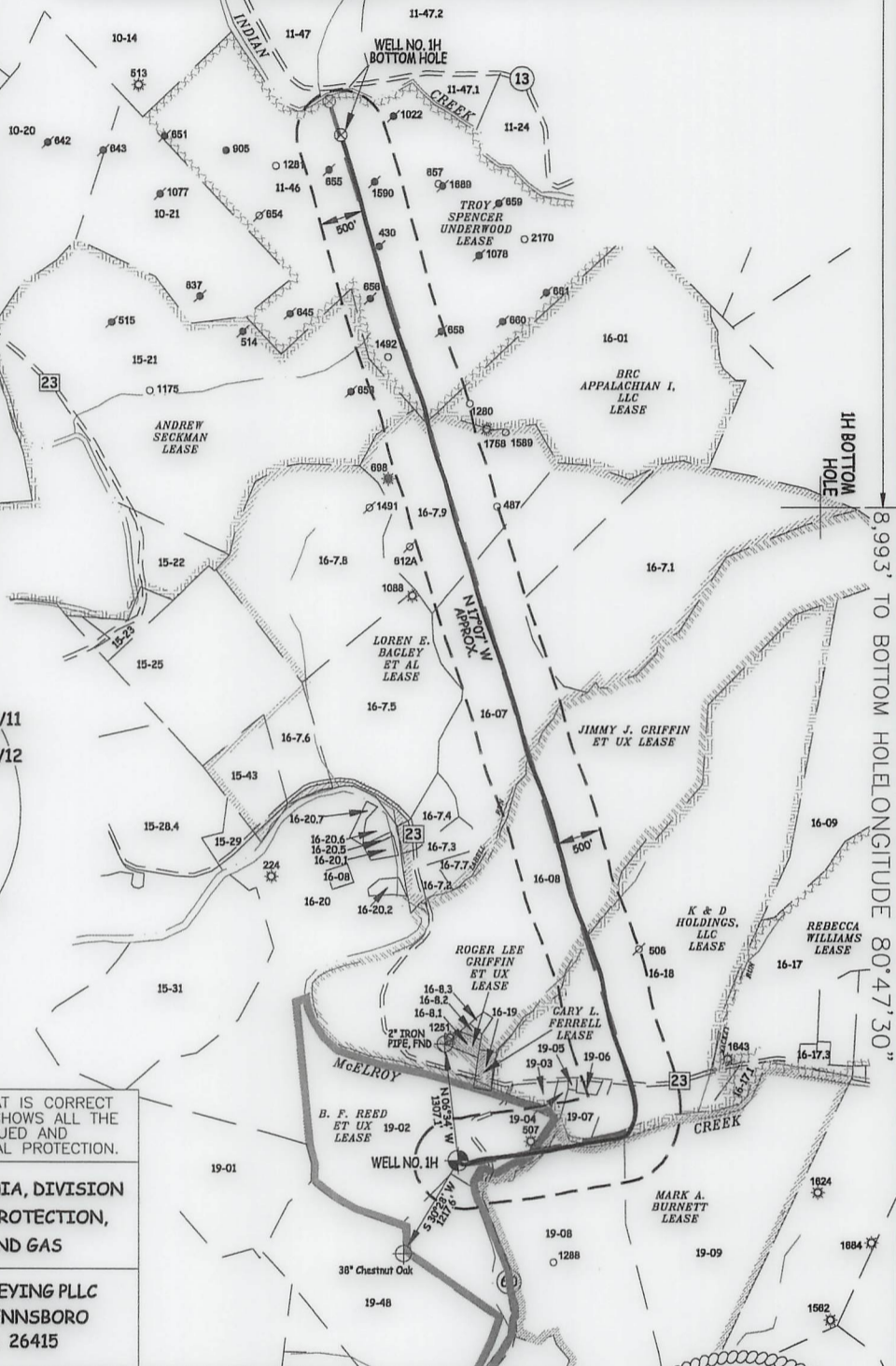


NOTE:  
12 WATER WELLS WERE LOCATED WITHIN 2000' OF THE PROPOSED WELL



W1	N 58°50' E	116.6'
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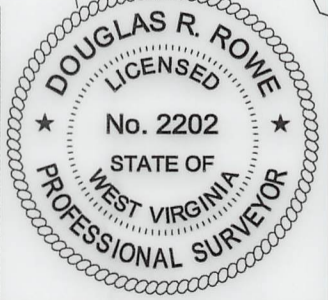
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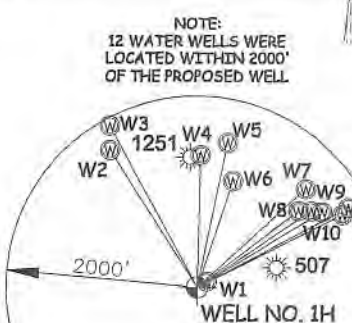
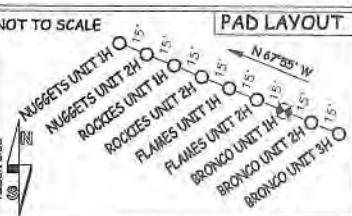
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W12	N 63°28' E	1703.7'

TM-Par	Surface Owner	15-29	Mitchell Herrick	16-08	June Griffin	16-20.5	Susan Spencer
10-14	Charlene Garrison	15-31	Roger Weese	16-8.1	Roger Griffin	16-20.6	Timothy Spencer
10-20	Kenneth Mason	15-43	Robert Kacher	16-8.2	Roger Griffin	16-20.7	Timothy Spencer
10-21	Kenneth Mason	16-01	Donald VanDine Jr.	16-8.3	Brian Eddy	19-01	Susan Spencer
11-24	Bobby Thomas	16-07	Robert Kacher	16-09	Jamie Straight	19-02	Antero Resources Corp.
11-46	Alva Spencer Est.	16-7.1	Donald Moore	16-17	Charles Straight	19-03	Larry Stevens
11-47	Jay Bee Oil & Gas Inc.	16-7.2	Donna Brumbaugh	16-17.1	Charles Straight	19-04	John Owens
11-47.1	James Cantor Sr.	16-7.3	Mary Blattner	16-17.2	Rodney Tippine	19-05	Paul Weekley
11-47.2	Everett Stanley	16-7.4	Donald Moore	16-17.3	Charles Kimball	19-06	Paul Weekley
15-21	Robert Jennings	16-7.5	Robert Kocher	16-20	Susan Spencer	19-07	Patricia Montgomery
15-22	Joe Kimball	16-7.6	Robert Kocher	16-20.1	Susan Spencer	19-08	John Lewis Jr.
15-23	Kenneth Kline	16-7.7	Robert Kocher	16-20.2	Gary Nichols	19-09	Robert Walsh
15-25	William Roberts	16-7.8	Blattner & Howard LLC	16-20.3	Gary Nichols	19-48	Lloyd Talkington
15-28.4	George Hamilton	16-7.9	Mary Blattner				



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.



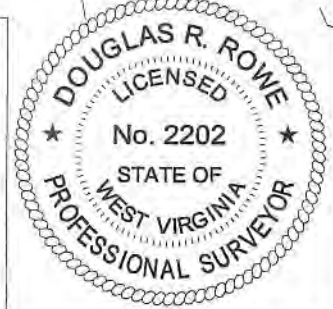
**STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**WILLOW LAND SURVEYING PLLC**  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 19-006WA  
DRAWING # BRONCO1HAD  
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 +/-  
○ Proposed Well Path  
⊙ As Drilled Well Path

*DOUGLAS R. ROWE*  
DOUGLAS R. ROWE P.S. 2202  
DATE 06/09/21  
OPERATOR'S WELL# BRONCO UNIT #1H

**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 500 FEET 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.



WELL TYPE: OIL \_\_\_ GAS **X** LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION **X** STORAGE \_\_\_ DEEP \_\_\_ SHALLOW **X**  
LOCATION: ELEVATION 749' - AS BUILT WATERSHED **McELROY CREEK** STATE **47** COUNTY **095** PERMIT **02660**  
QUADRANGLE **SHIRLEY 7.5'** DISTRICT **McELROY** COUNTY **TYLER**  
SURFACE OWNER **ANTERO RESOURCES CORPORATION** ACREAGE **127.86 ACRES +/-**  
OIL & GAS ROYALTY OWNER **B.F. REED ET UX; MARK A. BURNETT; K & D HOLDINGS, LLC; JIMMY J. GRIFFIN ET UX; LOREN E. BAGLEY ET AL; TROY SPENCER UNDERWOOD** LEASE ACREAGE **130 AC.±; 256 AC.±; 219.39 AC.±; 236 AC.±; 502.8 AC.±; 257 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 **6,450' TVD 18,186' MD**  
WELL OPERATOR **ANTERO RESOURCES CORP.** DESIGNATED AGENT **DIANNA STAMPER - CT CORPORATION SYSTEM**  
ADDRESS **1615 WYNKOOP ST. DENVER, CO 80202** ADDRESS **5400 D BIG TYLER ROAD CHARLESTON, WV 25313**

5,246'

8,993' TO BOTTOM HOLE  
LONGITUDE 80°45'00"

COUNTY NAME PERMIT

06/09/2023

*AS*

LATITUDE 39°25'00"

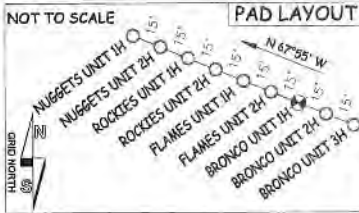
11,184'

891' TO BOTTOM HOLE  
LATITUDE 39°27'30"

Antero Resources Corporation  
Well No. Bronco Unit 1H

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 331,238ft E: 1,635,599ft  
LAT: 39°24'08.15" LON: 80°47'22.48"  
BOTTOM HOLE INFORMATION:  
N: 342,687ft E: 1,634,282ft  
LAT: 39°26'01.11" LON: 80°47'41.36"  
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: 4,361,448m E: 518,132m  
BOTTOM HOLE INFORMATION:  
N: 4,364,929m E: 517,673m



NOTE:  
12 WATER WELLS WERE LOCATED WITHIN 2000' OF THE PROPOSED WELL

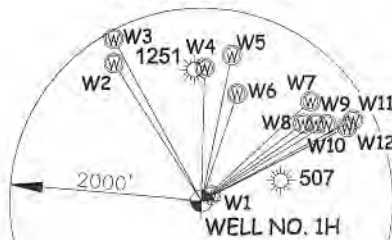


Table listing well identifiers (W1-W12) and their coordinates (North, East, Distance).

Table listing Surface Owners and their corresponding well numbers (e.g., Mitchell Herrick 15-29, June Griffin 16-08).



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 # 19-006WA  
DRAWING # BRONCO1HAD  
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 +/-  
--- Proposed Well Path  
--- As Drilled Well Path  
DOUGLAS R. ROWE P.S. 2202  
DATE 09/14/20  
OPERATOR'S WELL# BRONCO UNIT #1H

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.  
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WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 095 02660  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
LOCATION: ELEVATION 749' - AS BUILT WATERSHED McELROY CREEK STATE COUNTY PERMIT  
QUADRANGLE SHIRLEY 7.5 DISTRICT McELROY COUNTY TYLER 06/09/2023  
SURFACE OWNER ANTERO RESOURCES CORPORATION ACREAGE 127.86 ACRES +/-  
OIL & GAS ROYALTY OWNER B.F. REED ET UX; MARK A. BURNETT; K & D HOLDINGS, LLC; LEASE ACREAGE 130 AC.±; 256 AC.±; 219.39 AC.±;  
JIMMY J. GRIFFIN ET UX; LOREN E. BAGLEY ET AL; TROY SPENCER UNDERWOOD 236 AC.±; 502.8 AC.±; 257 AC.±;

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(SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,450' TVD 18,186' 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

5,246'  
LONGITUDE 80°45'00"  
8,993.3' TO BOTTOM HOLE  
LONGITUDE 80°47'30"



API 47-095-02660 Farm Name Antero Resources Corporation Well Number Bronco Unit 1H

**Exhibit 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3/10/2021	18069.2	18025.5	36	Marcellus
2	3/10/2021	17985.18605	17769.3023	36	Marcellus
3	3/11/2021	17730.98837	17515.1047	36	Marcellus
4	3/11/2021	17476.7907	17260.907	36	Marcellus
5	3/11/2021	17222.59302	17006.7093	36	Marcellus
6	3/12/2021	16968.39535	16752.5116	36	Marcellus
7	3/12/2021	16714.19767	16498.314	36	Marcellus
8	3/12/2021	16460	16244.1163	36	Marcellus
9	3/13/2021	16205.80233	15989.9186	36	Marcellus
10	3/13/2021	15951.60465	15735.7209	36	Marcellus
11	3/13/2021	15697.40698	15481.5233	36	Marcellus
12	3/14/2021	15443.2093	15227.3256	36	Marcellus
13	3/14/2021	15189.01163	14973.1279	36	Marcellus
14	3/14/2021	14934.81395	14718.9302	36	Marcellus
15	3/15/2021	14680.61628	14464.7326	36	Marcellus
16	3/15/2021	14426.4186	14210.5349	36	Marcellus
17	3/15/2021	14172.22093	13956.3372	36	Marcellus
18	3/16/2021	13918.02326	13702.1395	36	Marcellus
19	3/16/2021	13663.82558	13447.9419	36	Marcellus
20	3/16/2021	13409.62791	13193.7442	36	Marcellus
21	3/16/2021	13155.43023	12939.5465	36	Marcellus
22	3/17/2021	12901.23256	12685.3488	36	Marcellus
23	3/17/2021	12647.03488	12431.1512	36	Marcellus
24	3/17/2021	12392.83721	12176.9535	36	Marcellus
25	3/18/2021	12138.63953	11922.7558	36	Marcellus
26	3/21/2021	11884.44186	11668.5581	36	Marcellus
27	3/21/2021	11630.24419	11414.3605	36	Marcellus
28	3/21/2021	11376.04651	11160.1628	36	Marcellus
29	3/22/2021	11121.84884	10905.9651	36	Marcellus
30	3/22/2021	10867.65116	10651.7674	36	Marcellus
31	3/22/2021	10613.45349	10397.5698	36	Marcellus
32	3/23/2021	10359.25581	10143.3721	36	Marcellus
33	3/23/2021	10105.05814	9889.17442	36	Marcellus
34	3/23/2021	9850.860465	9634.97674	36	Marcellus
35	3/24/2021	9596.662791	9380.77907	36	Marcellus
36	3/24/2021	9342.465116	9126.5814	36	Marcellus
37	3/25/2021	9088.267442	8872.38372	36	Marcellus
38	3/25/2021	8834.069767	8618.18605	36	Marcellus
39	3/25/2021	8579.872093	8363.98837	36	Marcellus
40	3/25/2021	8325.674419	8109.7907	36	Marcellus
41	3/26/2021	8071.476744	7855.59302	36	Marcellus
42	3/26/2021	7817.27907	7601.39535	36	Marcellus
43	3/26/2021	7563.081395	7347.19767	36	Marcellus
44	3/27/2021	7308.883721	7093	36	Marcellus

06/09/2023

JM

## 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	3/10/2021	72.6	7953	8122	4577.35	181790	215465	N/A
2	3/10/2021	80.61	7952	6981.38	4306.17	503520	389847	N/A
3	3/11/2021	83.46	7812.2	5755.96	4209.32	507120	387511	N/A
4	3/11/2021	85.75	8111	6061	4169.4	511120	382273	N/A
5	3/11/2021	85.77	8104.02	6086.13	3650.23	508380	384783	N/A
6	3/12/2021	84.78	8049.7	5758.5	4930.84	505580	469581	N/A
7	3/12/2021	84.75	8035	8088	5040.72	506380	364643	N/A
8	3/12/2021	88.94	8198.31	2746.04	4871.41	505260	373322	N/A
9	3/13/2021	88.32	8022.42	2587.11	3775.43	516480	359995	N/A
10	3/13/2021	84.95	8158.72	5100.1	4093.05	511640	370227	N/A
11	3/13/2021	88.54	8080.85	7014.4	3861.33	506260	371267	N/A
12	3/14/2021	87.05	7954	3065	3815.52	503392	366133	N/A
13	3/14/2021	93.29	8301	7102	4000.49	500130	364253	N/A
14	3/14/2021	85.53	8198.3	8156.48	3965.3	509900	376532	N/A
15	3/15/2021	91.4	8085.31	2979.05	4339.58	504670	362538	N/A
16	3/15/2021	95.13	8487	7748	4037.61	506540	367092	N/A
17	3/15/2021	86.45	8128.06	6554.31	4067.66	506580	367894	N/A
18	3/16/2021	92.86	8319.11	2697.27	4110.04	500650	366576	N/A
19	3/16/2021	94.85	8363	3047	3757.61	345420	365165	N/A
20	3/16/2021	93.38	8333	5584	3983.82	181600	428586	N/A
21	3/16/2021	96.46	7949	7935	4133	184180	371352	N/A
22	3/17/2021	94.67	7899.92	8225.83	4028.24	186040	368924	N/A
23	3/17/2021	94.89	8425	7223	3951.24	342820	374957	N/A
24	3/17/2021	93.1	8267	7321	4112	503930	414744	N/A
25	3/18/2021	94.05	8199.83	8324.71	3973.19	501670	368425	N/A
26	3/21/2021	86	7545	7000	5324	502090	416027	N/A
27	3/21/2021	95.69	8223.99	6519.18	4697.99	501850	372537	N/A
28	3/21/2021	92.4	8141	7420	4577.07	495040	415855	N/A
29	3/22/2021	93.61	7863	7196	4179	493020	362719	N/A
30	3/22/2021	94.95	8263	6719	4462.83	501650	371746	N/A
31	3/22/2021	96.21	8405.95	7559.19	4867.76	500870	372334	N/A
32	3/23/2021	95.21	8126	7023	4711	508260	371360	N/A
33	3/23/2021	95.17	8009.82	6492.66	5346.57	501840	373246	N/A
34	3/23/2021	94.91	8017.28	5907.18	4026.36	500940	369762	N/A
35	3/24/2021	94.31	8001.2	6440.14	4736.65	496360	374634	N/A
36	3/24/2021	90.23	7983	6041	4010	499450	368643	N/A
37	3/25/2021	95.75	7990	6551	4116	509530	369564	N/A
38	3/25/2021	95.73	7813.47	6018.05	4797.58	502050	379498	N/A
39	3/25/2021	96.48	7913.27	6508.54	4588.98	498910	370975	N/A
40	3/25/2021	93.36	7423	6574	5004	508250	369598	N/A
41	3/26/2021	96.42	7608.56	6303.13	4482.05	504970	366064	N/A
42	3/26/2021	95.69	7921.43	6066.75	4442.18	520020	378088	N/A
43	3/26/2021	93.14	7912	6261	4652	512350	418427	N/A
44	3/27/2021	93.41	7774	6825	4103	512750	415303	N/A
	AVG=	91	8,053	6,266	4,338	20,611,252	16,568,465	TOTAL

06/09/2023

JM

## EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Shale	0	310	0	310
Silty sandstone	310	460	310	460
Shale	460	700	460	700
Silty Shale	700	820	700	820
Shale with interbedded limestone	820	850	820	850
Shale	850	880	850	880
Shale w/ trace coal	880	910	880	910
Shaley Sandstone	910	1,180	910	1,180
Shale	1,180	1,240	1,180	1,240
Sandstone w/ interbedded coals	1,240	1,330	1,240	1,330
Sandstone w/ trace coal	1,330	1,480	1,330	1,480
Sandstone	1,480	1,510	1,480	1,510
Shale	1,510	1,636	1,510	N/A
Big Lime	1,636	2,353	1,647	2,422
Fifty Foot Sandstone	2,353	2,447	2,422	2,527
Gordon	2,447	2,760	2,527	2,870
Fifth Sandstone	2,760	2,795	2,870	2,909
Bayard	2,795	3,577	2,909	3,762
Speechley	3,577	3,809	3,762	4,018
Balltown	3,809	4,310	4,018	4,565
Bradford	4,310	4,773	4,565	5,070
Benson	4,773	5,028	5,070	5,348
Alexander	5,028	6,211	5,348	6,664
Sycamore	6,023	6,186	6,468	6,639
Middlesex	6,186	6,319	6,664	6,844
Burkett	6,319	6,348	6,869	6,902
Tully	6,348	6,396	6,927	7,046
Marcellus	6,396	NA	7,046	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.

06/09/2023

JM

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/10/2021
Job End Date:	3/27/2021
State:	West Virginia
County:	Tyler
API Number:	47-095-02660-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	BRONCO UNIT 1H
Latitude:	39.40226000
Longitude:	-80.78958000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,454
Total Base Water Volume (gal):	17,166,597
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
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.81208	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.08886	

DM

WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
FLUID Enviro-Syn HCR-7000-WL	Fluid Energy Group	Acid Replacement					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
Sand-Premium White-40/70	Halliburton	Proppant					
				Listed Below			
Sand-Premium White-30/70	Halliburton	Proppant					
				Listed Below			

CH

HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
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	13.03910	
			Complex Amine Compound	Proprietary	60.00000	0.03018	
			Hydrochloric acid	7647-01-0	30.00000	0.01511	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01509	
			Guar gum	9000-30-0	100.00000	0.00690	
			Proprietary	Proprietary	20.00000	0.00655	
			Proprietary	Proprietary	10.00000	0.00327	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00251	
			Surfactant	Proprietary	5.00000	0.00251	
			Glutaraldehyde	111-30-8	30.00000	0.00249	
			Ethoxylated alcohols	Proprietary	5.00000	0.00051	
			Alkoxyated polyhydric alcohol	Proprietary	1.00000	0.00050	
			Organic chloride compound	Proprietary	1.00000	0.00050	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00042	
			Methanol	67-56-1	100.00000	0.00018	
			Ammonium persulfate	7727-54-0	100.00000	0.00012	
			Ethanol	64-17-5	1.00000	0.00008	
			Oxylated phenolic resin	Proprietary	30.00000	0.00004	

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			Modified thiourea polymer	Proprietary	30.00000	0.00003	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00003	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Sodium glycolate	2836-32-0	0.01000	0.00001	
			Organic salt #1	Proprietary	0.01000	0.00001	
			Sodium hydroxide	1310-73-2	0.01000	0.00001	
			Organic salt #2	Proprietary	0.01000	0.00001	
			Formaldehyde	50-00-0	0.01000	0.00001	
			Nitrated acetate salt	Proprietary	0.01000	0.00001	
			Acrylamide	79-06-1	0.01000	0.00001	
			Hexadecene	629-73-2	5.00000	0.00000	
			Propargyl alcohol	107-19-7	5.00000	0.00000	
			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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