

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
APR 07 2023
WV Department of
Environmental Protection

API 47-085-10424 County Ritchie District Union
Quad Oxford 7.5' Pad Name Cashew Field/Pool Name Environmental Protection
Farm name Elmer W. Pierce Well Number Smelt Unit 2H
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 4335835m Easting 512294m
Landing Point of Curve Northing 4335592.93m Easting 513503.06m
Bottom Hole Northing 4332820m Easting 514468m

Elevation (ft) 1040' 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 4/6/2022 Date drilling commenced 5/17/2022 Date drilling ceased 10/8/2022
Date completion activities began 11/12/2022 Date completion activities ceased 12/28/2022
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 184,53,236' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1847,1759,1709' Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Reported Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
APPROVED
IMR
05/11/2023

API 47-085 - 10424 Farm name Elmer W. Pierce Well number Smelt Unit 2H

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	20"	16"	130'	New	62.64#, X-60	N/A	Y
Surface	13-1/2"	10-3/4"	352'	New	40.5#, J-55	N/A	Y
Coal							
Intermediate 1	9-7/8"	7-5/8"	2820'	New	26.4#, L-80	N/A	Y
Intermediate 2							
Intermediate 3							
Production	6-3/4"	5"	18742'	New	18#, P-110CY	N/A	Y
Tubing		2-3/8"	7414'		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	81 sx	15.6	1.18	96	0'	8 Hrs.
Surface	Class A	220 sx	15.8	1.17	257	0'	8 Hrs.
Coal							
Intermediate 1	Class A	655 sx	15.8	1.16	760	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	634 sx (Lead)	11 (Lead), 8.33 (Tail)	2.7 (Lead)	900	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 22300' MD, 6900' TVD (BHL), 6457' (Deepest Point Drilled) Loggers TD (ft) 22300' MD

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

Plug back procedure N/A

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Kick off depth (ft) 6612'

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

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

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6387' (TOP)</u>	<u>TVD</u>	<u>7749' (TOP)</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1850 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 11013 mcfpd Oil 182 bpd NGL --- bpd Water 1548 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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***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

Logging Company GR Energy Services
Address 2315 PA-66 City Delmont State PA

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

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 3/15/2023

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

05/11/2023

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Exhibit 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	11/12/2022	18571.4	18528.9	60	Marcellus
2	11/12/2022	18491.17075	18324.52	60	Marcellus
3	11/13/2022	18288.79528	18122.15	60	Marcellus
4	11/13/2022	18086.41981	17919.77	60	Marcellus
5	11/13/2022	17884.04434	17717.40	60	Marcellus
6	11/14/2022	17681.66887	17515.02	60	Marcellus
7	11/14/2022	17479.2934	17312.65	60	Marcellus
8	11/15/2022	17276.91792	17110.27	60	Marcellus
9	11/15/2022	17074.54245	16907.90	60	Marcellus
10	11/15/2022	16872.16698	16705.52	60	Marcellus
11	11/16/2022	16669.79151	16503.15	60	Marcellus
12	11/16/2022	16467.41604	16300.77	60	Marcellus
13	11/16/2022	16265.04057	16098.39	60	Marcellus
14	11/17/2022	16062.66509	15896.02	60	Marcellus
15	11/17/2022	15860.28962	15693.64	60	Marcellus
16	11/18/2022	15657.91415	15491.27	60	Marcellus
17	11/18/2022	15455.53868	15288.89	60	Marcellus
18	11/19/2022	15253.16321	15086.52	60	Marcellus
19	11/19/2022	15050.78774	14884.14	60	Marcellus
20	11/19/2022	14848.41226	14681.77	60	Marcellus
21	11/20/2022	14646.03679	14479.39	60	Marcellus
22	11/20/2022	14443.66132	14277.02	60	Marcellus
23	11/20/2022	14241.28585	14074.64	60	Marcellus
24	11/21/2022	14038.91038	13872.26	60	Marcellus
25	11/21/2022	13836.53491	13669.89	60	Marcellus
26	11/21/2022	13634.15943	13467.51	60	Marcellus
27	11/21/2022	13431.78396	13265.14	60	Marcellus
28	11/22/2022	13229.40849	13062.76	60	Marcellus
29	11/22/2022	13027.03302	12860.39	60	Marcellus
30	11/23/2022	12824.65755	12658.01	60	Marcellus
31	11/23/2022	12622.28208	12455.64	60	Marcellus
32	11/23/2022	12419.9066	12253.26	60	Marcellus
33	11/24/2022	12217.53113	12050.88	60	Marcellus
34	11/24/2022	12015.15566	11848.51	60	Marcellus
35	11/25/2022	11812.78019	11646.13	60	Marcellus
36	11/25/2022	11610.40472	11443.76	60	Marcellus
37	11/25/2022	11408.02925	11241.38	60	Marcellus
38	11/25/2022	11205.65377	11039.01	60	Marcellus
39	11/26/2022	11003.2783	10836.63	60	Marcellus
40	11/26/2022	10800.90283	10634.26	60	Marcellus
41	11/27/2022	10598.52736	10431.88	60	Marcellus
42	11/27/2022	10396.15189	10229.51	60	Marcellus
43	11/27/2022	10193.77642	10027.13	60	Marcellus
44	11/27/2022	9991.400943	9824.75	60	Marcellus
45	11/28/2022	9789.025472	9622.38	60	Marcellus
46	11/28/2022	9586.65	9420.00	60	Marcellus
47	11/28/2022	9384.274528	9217.63	60	Marcellus
48	11/29/2022	9181.899057	9015.25	60	Marcellus
49	11/29/2022	8979.523585	8812.88	60	Marcellus
50	11/29/2022	8777.148113	8610.50	60	Marcellus
51	11/30/2022	8574.772642	8408.13	60	Marcellus
52	11/30/2022	8372.39717	8205.75	60	Marcellus
53	11/30/2022	8170.021698	8003.38	60	Marcellus
54	12/1/2022	7967.646226	7801.00	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	11/12/2022	68.0	8074	8419	2699	173290	225022	N/A
2	11/12/2022	71.1	8396	6423	3260	414740	309560	N/A
3	11/13/2022	72.9	8387	6327	3282	395868	378582	N/A
4	11/13/2022	73.4	8334	6397	3403	405579	319398	N/A
5	11/13/2022	71.7	8423	6352	3237	410071	317751	N/A
6	11/14/2022	68.1	7927	6314	3433	402484	307148	N/A
7	11/14/2022	75.3	8194	6214	3552	416863	305728	N/A
8	11/15/2022	75.8	8234	5846	3490	417304	324219	N/A
9	11/15/2022	64.6	8265	6748	3200	400183	311496	N/A
10	11/15/2022	72.7	8314	8421	2917	405267	311080	N/A
11	11/16/2022	70.9	8098	7129	3279	411547	300963	N/A
12	11/16/2022	73.9	8436	6525	3366	416665	300259	N/A
13	11/16/2022	72.8	8261	8044	2772	414348	352551	N/A
14	11/17/2022	72.7	8104	5925	3583	406965	300985	N/A
15	11/17/2022	73.9	8115	4875	3140	411169	306209	N/A
16	11/18/2022	73.9	8160	6462	3017	405424	280259	N/A
17	11/18/2022	74.3	8365	7782	2872	410710	289401	N/A
18	11/19/2022	75.6	8200	7099	3643	400460	295688	N/A
19	11/19/2022	74.6	8281	5558	3322	405120	281545	N/A
20	11/19/2022	72.5	8162	7381	2881	400796	284070	N/A
21	11/20/2022	76.5	8168	7468	3345	410800	292990	N/A
22	11/20/2022	74.2	8040	7581	3338	398710	285643	N/A
23	11/20/2022	75.1	8085	7231	3005	399420	287164	N/A
24	11/21/2022	77.0	8105	7749	3206	399920	283248	N/A
25	11/21/2022	76.3	8015	4500	3488	406030	283564	N/A
26	11/21/2022	77.3	8272	6979	3865	399230	288573	N/A
27	11/21/2022	74.1	8017	7658	3187	396676	289163	N/A
28	11/22/2022	82.7	8247	6759	3243	400006	296736	N/A
29	11/22/2022	82.5	8151	6367	3442	402419	299134	N/A
30	11/23/2022	80.3	8210	5967	3365	406074	296677	N/A
31	11/23/2022	80.3	8102	7038	2794	403260	294033	N/A
32	11/23/2022	81.0	8041	7543	3915	400354	286220	N/A
33	11/24/2022	70.4	8172	7485	3160	418151	330937	N/A
34	11/24/2022	83.0	8106	6921	2506	400566	290151	N/A
35	11/25/2022	82.5	7966	4581	3978	412757	303476	N/A
36	11/25/2022	83.1	7820	6592	2826	413778	304291	N/A
37	11/25/2022	78.1	7779	7036	2688	400146	286842	N/A
38	11/25/2022	54.7	8612	6910	3473	414512	458802	N/A
39	11/26/2022	84.1	7674	7113	3930	411826	298107	N/A
40	11/26/2022	78.7	7382	6645	2755	409095	308783	N/A
41	11/27/2022	81.7	7656	5870	3756	416154	287457	N/A
42	11/27/2022	77.9	7179	3989	2836	399624	295463	N/A
43	11/27/2022	83.6	7614	6925	3082	407474	298597	N/A
44	11/27/2022	86.3	7798	6796	4668	412220	290593	N/A
45	11/28/2022	85.1	7842	5868	3807	407169	291950	N/A
46	11/28/2022	81.2	7571	6184	2641	408191	294308	N/A
47	11/28/2022	82.2	7702	6670	3917	410727	289471	N/A
48	11/29/2022	83.0	7772	6783	3487	408765	291288	N/A
49	11/29/2022	85.8	7600	6048	2415	395797	283122	N/A
50	11/29/2022	85.6	7426	6507	2529	395063	285394	N/A
51	11/30/2022	81.8	7436	6059	2961	416550	296977	N/A
52	11/30/2022	84.1	7328	4929	2694	412751	300335	N/A
53	11/30/2022	82.7	7450	7087	2826	391196	293889	N/A
54	12/1/2022	83.9	7348	5390	2950	374768	262987	N/A
	AVERAGE	77	7,989	6,583	3,230	21,685,032	16,228,279	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	2,050	1,930	2,050
Sandy Siltstone, occ shale	2,050	1,839	2,050	1,967
Big Lime	1,869	2,383	1,967	2,615
Fifty Foot Sandstone	2,383	2,575	2,585	2,835
Gordon	2,575	2,852	2,805	3,158
Fifth Sandstone	2,852	2,951	3,128	3,282
Bayard	2,951	3,659	3,252	4,151
Speechley	3,659	3,835	4,121	4,359
Balltown	3,835	4,352	4,329	4,983
Bradford	4,352	4,772	4,953	5,496
Benson	4,772	5,017	5,466	5,799
Alexander	5,017	6,228	5,769	7,317
Sycamore	6,016	6,198	7,017	7,287
Middlesex	6,198	6,313	7,287	7,511
Burkett	6,313	6,362	7,511	7,648
Tully	6,362	6,387	7,648	7,749
Marcellus	6,387	NA	7,749	NA

Marcellus

*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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LATITUDE 39°12'30" 6,951'

LATITUDE 39°10'00" 11,674' TO BOTTOM HOLE

Antero Resources Corporation Well No. Smelt 2H

AS DRILLED DATA: WELL 2H TOP HOLE INFORMATION: N: 247,509ft E: 1,615,039ft LAT: 39°10'17.65" LON: 80°51'28.26" BOTTOM HOLE INFORMATION: N: 237,563ft E: 1,621,987ft LAT: 39°08'40.38" LON: 80°49'58.18" 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 2H TOP HOLE INFORMATION: N: 4,335,835m E: 512,293m BOTTOM HOLE INFORMATION: N: 4,332,841m E: 514,461m

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,224,438ft E: 1,680,703ft 2H BOTTOM HOLE INFORMATION: N: 14,214,613ft E: 1,687,814ft

POINT OF ENTRY INFORMATION: N: 14,224,978ft E: 1,684,261ft BOTTOM HOLE INFORMATION: N: 14,214,613ft E: 1,687,814ft

Table listing well numbers and owners in Southwest District - Doddridge County and Union District - Ritchie County. Includes names like David Ball, Trustees of Baptist Church, Kevin Ball, Isaac Richards, James Haught, Jeffrey Bailey, Brown Goodwin, Charles Leonard, Brown Goodwin, Coy Adams, Arden Cogar, Donita Hilley, James Beck, Brian Harriman, Mark Vansant, Danita Hilley, Brian Harriman, Randall Hess, Steven Lusk, Kenny Osbourne, Kent Grotjan, Joshua Friedman, Miles Ball, M E Church, Brian Vansant, James Haught, Miles Ball, Kent Grotjan, Douglas Maxson, Mary Deberry, Linda Jennings, Clarence Bush, Patricia Shepler, Daryl Shepler, Terrell Henderson, Santi Italiano, etc.

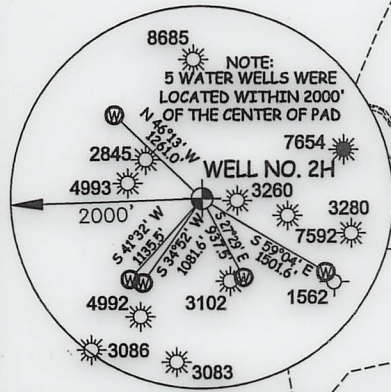
WV NORTH ZONE GRID NORTH

8,055' TO BOTTOM HOLE

13,391'

LONGITUDE 80°47'30"

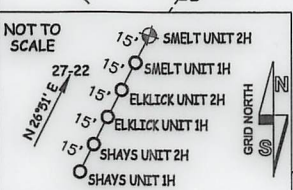
LONGITUDE 80°50'00"



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.



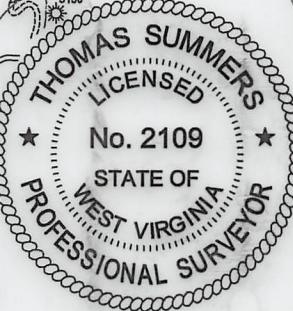
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS. WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415



JOB # 21-015WA DRAWING # SMELT2HAD 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

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.



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

DATE 03/17/23 OPERATOR'S WELL# SMELT2H

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 085 - 10424 (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 +/- 05/11/2023 OIL & GAS ROYALTY OWNER R. F. KEISTER ET AL; B. GUY WHITEHAIR ET UX; RALPH JETT ET UX; LEASE ACREAGE 70 AC.±; 17 AC.±; 148 AC.±; DAVID D. BALL ET UX; ENID W. ZINN ET AL; MITCHELL L. RICHARDS ET AL; WALLACE B. HAUGHT ET AL; 260 AC.±; 40 AC.±; 29 AC.±; 100 AC.±; E. W. SUMMERS ET UX; LUCILLE DEBERRY; MARY LUCILLE DEBERRY; GOODWIN BROWN, LLC 125 AC.±; 147 AC.±; 46 AC.±; 101.34 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 6,412' TVD 18,742' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAKS BLVD DENVER, CO 80202 BRIDGEPORT, WV 26330

LATITUDE 39°12'30"

6,951'

LATITUDE 39°10'00"

11,674' TO BOTTOM HOLE

Antero Resources Corporation Well No. Smelt 2H

AS DRILLED DATA: WELL 2H TOP HOLE INFORMATION: N: 247,509ft E: 1,615,039ft LAT: 39°10'17.65" LON: 80°51'28.26" BOTTOM HOLE INFORMATION: N: 237,563ft E: 1,621,987ft LAT: 39°08'40.38" LON: 80°49'58.18" 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 2H TOP HOLE INFORMATION: N: 4,335,835m E: 512,293m BOTTOM HOLE INFORMATION: N: 4,332,841m E: 514,461m

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,224,438ft E: 1,680,703ft 2H BOTTOM HOLE N: 14,214,613ft E: 1,687,814ft

POINT OF ENTRY INFORMATION: N: 14,224,978ft E: 1,684,261ft BOTTOM HOLE INFORMATION: N: 14,214,613ft E: 1,687,814ft

Table listing lease owners and well numbers. Southwest District - Doddridge County includes wells 12-1 through 13-45. Union District - Ritchie County includes wells 21-4 through 27-19.1. A second list for Union District includes wells 27-19.2 through 27-24.1.

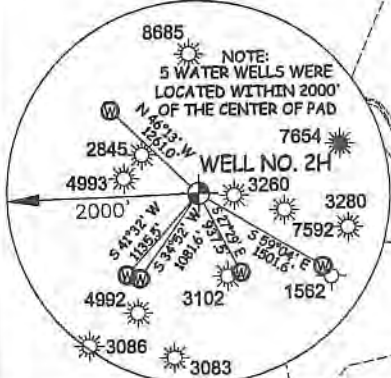
WV NORTH ZONE GRID NORTH

8,055' TO BOTTOM HOLE

13,391'

LONGITUDE 80°47'30"

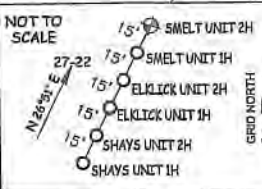
LONGITUDE 80°50'00"



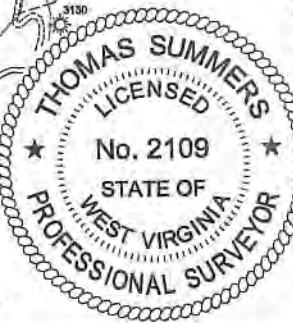
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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



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JOB # 21-015WA DRAWING # SMELT2HAD 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 DATE 03/17/23 OPERATOR'S WELL # SMELT 2H

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.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/12/2022
Job End Date:	11/30/2022
State:	West Virginia
County:	Ritchie
API Number:	47-085-10424-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	SMELT UNIT 2H
Latitude:	39.17157000
Longitude:	-80.85785000
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,457
Total Base Water Volume (gal):	17,077,318
Total Base Non Water Volume:	0



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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	86.78729	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.14117	

OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
HYDROCHLORI C ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
SAND, COMMON BROWN 100 MESH	Halliburton	Proppant					
				Listed Below			
Chemstream StimSTREAM FR 2800	Chemstream, Inc.	Friction Reducer					
				Listed Below			

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Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
Sand-Premium White-30/70	Halliburton	Proppant					
				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	12.96524	
			Hydrochloric acid	7647-01-0	30.00000	0.03944	
			Guar gum	9000-30-0	100.00000	0.02728	
			Distillates, (petroleum), hydrotreated light	64742-47-8	25.00000	0.01924	
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00385	
			Glutaraldehyde	111-30-8	30.00000	0.00244	
			Complex Amine Compound	Proprietary	60.00000	0.00159	
			Ammonium persulfate	7727-54-0	100.00000	0.00085	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00079	
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041	
			Oxylated phenolic resin	Proprietary	30.00000	0.00025	
			Methanol	67-56-1	100.00000	0.00025	
			Surfactant	Proprietary	5.00000	0.00013	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00013	
			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	0.00007	

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			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Ethoxylated alcohols	Proprietary	5.00000	0.00004	
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00003	
			Organic chloride compound	Proprietary	1.00000	0.00003	
			Hexadecene	629-73-2	5.00000	0.00001	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00001	
			Acrylamide	79-06-1	0.01000	0.00000	
			Organic salt #2	Proprietary	0.01000	0.00000	
			Formaldehyde	50-00-0	0.01000	0.00000	
			Nitrated acetate salt	Proprietary	0.01000	0.00000	
			Sodium glycolate	2836-32-0	0.01000	0.00000	
			Organic salt #1	Proprietary	0.01000	0.00000	
			Sodium hydroxide	1310-73-2	0.01000	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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