

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

OCT 12 2017

WV Department of  
Environmental Protection

API 47 - 085 - 10171 County Ritchie District Clay  
Quad Pennsboro 7.5' Pad Name Zinn Pad Field/Pool Name -----  
Farm name Ernest E. Zinn et al Well Number Piedmont 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 4352323m Easting 505330m  
Landing Point of Curve Northing 4352548.554m Easting 505506.075m  
Bottom Hole Northing 4354854m Easting 503853m

Elevation (ft) 1120' 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 12/16/2014 Date drilling commenced 02/08/2016 Date drilling ceased 06/23/2016  
Date completion activities began 10/30/2016 Date completion activities ceased 04/06/2017  
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 107' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1567' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

**APPROVED**

NAME: Michael Hoff

DATE: 10-25-17

Reviewed by: \_\_\_\_\_

API 47-085 - 10171 Farm name Ernest E. Zinn et al Well number Piedmont 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	24"	20"	40'	New	94#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	587'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2529'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15383'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6680'		5.95#, N-80		
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	95 sx	15.5	1.19	113	0'	8 Hrs.
Surface	Class A	720 sx	15.6	1.19	857	0'	8 Hrs.
Coal							
Intermediate 1	Class A	980 sx	15.6	1.18	1156	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	869 sx (Lead) 1373 sx (Tail)	13.6 (Lead), 15.19 (Tail)	1.44 (Lead), 1.84 (Tail)	3778	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15383' MD, 6416' TVD (BHL), 6439' (Deepest Point Drilled) Loggers TD (ft) 15370' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6074'

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Norma Unit 1H API #47-085-10169). Please reference the wireline logs submitted with Form WR-35 for Norma Unit 1H. A Cement Bond Log has been included with this submittal.

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

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

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

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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

API 47- 085 - 10171 Farm name Ernest E. Zinn et al Well number Piedmont Unit 1H

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.

API 47- 085 - 10171 Farm name Ernest E. Zinn et al Well number Piedmont Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6382' (TOP)</u> TVD	<u>6731' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 8391 mcfpd Oil 129 bpd NGL --- bpd Water 795 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 <sub>2</sub> S, ETC)
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**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.

Drilling Contractor Patterson – UTI Drilling Company LLC  
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Allied Horizontal Wireline Services  
Address 381 Colonial Manor Rd. City North Huntingdon State PA Zip 15642

Cementing Company C&J Energy Services  
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Halliburton  
Address 121 Champion Way Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759  
Signature  Title Permitting Agent Date 10/11/2017

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

API 47-085-10171 Farm Name Ernest E. Zinn et al Well Number Piedmont Unit 1H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/30/2016	15088	15255	60	Marcellus
2	2/24/2017	14890	15057	60	Marcellus
3	2/25/2017	14692	14859	60	Marcellus
4	2/25/2017	14494	14661	60	Marcellus
5	2/25/2017	14296	14463	60	Marcellus
6	2/26/2017	14098	14265	60	Marcellus
7	2/26/2017	13901	14068	60	Marcellus
8	2/26/2017	13703	13870	60	Marcellus
9	2/26/2017	13505	13672	60	Marcellus
10	2/27/2017	13307	13474	60	Marcellus
11	2/27/2017	13109	13276	60	Marcellus
12	2/28/2017	12911	13078	60	Marcellus
13	2/28/2017	12713	12880	60	Marcellus
14	2/28/2017	12515	12682	60	Marcellus
15	3/1/2017	12317	12484	60	Marcellus
16	3/1/2017	12119	12286	60	Marcellus
17	3/1/2017	11921	12088	60	Marcellus
18	3/1/2017	11723	11890	60	Marcellus
19	3/2/2017	11526	11693	60	Marcellus
20	3/3/2017	11328	11495	60	Marcellus
21	3/3/2017	11130	11297	60	Marcellus
22	3/3/2017	10932	11099	60	Marcellus
23	3/3/2017	10734	10901	60	Marcellus
24	3/4/2017	10536	10703	60	Marcellus
25	3/4/2017	10338	10505	60	Marcellus
26	3/4/2017	10140	10307	60	Marcellus
27	3/5/2017	9942	10109	60	Marcellus
28	3/5/2017	9744	9911	60	Marcellus
29	3/6/2017	9546	9713	60	Marcellus
30	3/6/2017	9349	9515	60	Marcellus
31	3/6/2017	9151	9318	60	Marcellus
32	3/6/2017	8953	9120	60	Marcellus
33	3/6/2017	8755	8922	60	Marcellus
34	3/7/2017	8557	8724	60	Marcellus
35	3/7/2017	8359	8526	60	Marcellus
36	3/7/2017	8161	8328	60	Marcellus
37	3/8/2017	7963	8130	60	Marcellus
38	3/8/2017	7765	7932	60	Marcellus
39	3/8/2017	7567	7734	60	Marcellus
40	3/9/2017	7369	7536	60	Marcellus
41	3/9/2017	7171	7338	60	Marcellus
42	3/9/2017	6974	7140	60	Marcellus
43	3/9/2017	6776	6943	60	Marcellus

API 47-085-10171 Farm Name Ernest E. Zinn et al Well Number Piedmont 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	1/23/2017	72.5	7608	0.0	8831.0	289945	7460.2	N/A
2	2/24/2017	73.0	7751	5882.0	5227.0	268984	8054.8	N/A
3	2/25/2017	78.9	7599	5985.0	4040.0	357347	8248.6	N/A
4	2/25/2017	78.6	7420	5618.0	3391.0	355211	7678.8	N/A
5	2/25/2017	78.7	7163	5816.0	3534.0	356324	7676.8	N/A
6	2/26/2017	78.1	7320	5660.0	3711.0	359284	7888.4	N/A
7	2/26/2017	76.7	7306	5395.0	3560.0	354595	7608.5	N/A
8	2/26/2017	78.6	7308	5492.0	4056.0	354437	7534.9	N/A
9	2/26/2017	77.6	7323	5312.0	4822.0	355855	9597.3	N/A
10	2/27/2017	78.7	7320	5344.0	3585.0	352318	7640.9	N/A
11	2/27/2017	79.7	7403	5275.0	3276.0	354456	8495.4	N/A
12	2/28/2017	75.9	7035	5440.0	3662.0	354280	8659.7	N/A
13	2/28/2017	75.3	7641	5514.0	4467.0	353547	12415.1	N/A
14	2/28/2017	76.9	7520	5331.0	4461.0	353843	7636.5	N/A
15	3/1/2017	78.7	6913	5286.0	3645.0	355512	7722.6	N/A
16	3/1/2017	75.9	6720	5287.0	3481.0	351603	7578.3	N/A
17	3/1/2017	78.6	7258	6011.0	3338.0	351544	7510.1	N/A
18	3/1/2017	75.9	7028	5489.0	3307.0	353268	7575.0	N/A
19	3/2/2017	73.9	7042	5580.0	4816.0	357599	12093.1	N/A
20	3/3/2017	77.3	6878	5768.0	3937.0	356954	7782.7	N/A
21	3/3/2017	75.9	6662	5262.0	3753.0	355944	7609.5	N/A
22	3/3/2017	75.1	6750	5433.0	3612.0	356317	7511.4	N/A
23	3/3/2017	79.2	6994	6067.0	3742.0	360053	7621.1	N/A
24	3/4/2017	79.4	7129	5219.0	3992.0	360155	7782.9	N/A
25	3/4/2017	74.7	6982	5038.0	3645.0	356129	7549.3	N/A
26	3/4/2017	76.7	6847	5336.0	3840.0	355032	7570.3	N/A
27	3/5/2017	75.7	6787	5192.0	3793.0	354367	7536.3	N/A
28	3/5/2017	79.1	6926	5340.0	3548.0	355892	7603.7	N/A
29	3/6/2017	78.2	6976	5124.0	3754.0	354569	7586.6	N/A
30	3/6/2017	74.9	6844	5266.0	3780.0	355805	7447.3	N/A
31	3/6/2017	75.6	6836	5274.0	3710.0	354926	7381.1	N/A
32	3/6/2017	84.2	7019	5516.0	4196.0	356559	7566.0	N/A
33	3/6/2017	81.4	6947	5244.0	3739.0	357104	7492.3	N/A
34	3/7/2017	78.5	6725	5016.0	3613.0	355129	7481.1	N/A
35	3/7/2017	79.6	6626	5153.0	3649.0	357945	7541.5	N/A
36	3/7/2017	79.7	6564	5595.0	3345.0	354412	7503.8	N/A
37	3/8/2017	81.1	6275	5318.0	3395.0	354808	7412.3	N/A
38	3/8/2017	74.4	6804	5402.0	3456.0	355308	9210.2	N/A
39	3/8/2017	79.9	6812	5172.0	3523.0	356198	7854.5	N/A
40	3/9/2017	75.9	6142	5052.0	3727.0	355074	7415.8	N/A
41	3/9/2017	76.8	6381	5284.0	3812.0	355809	7279.6	N/A
42	3/9/2017	79.0	6320	5516.0	3402.0	354441	7681.1	N/A
43	3/9/2017	82.2	6455	5352.0	3428.0	340686	7782.5	N/A
	<b>AVG=</b>	<b>77.6</b>	<b>6,985</b>	<b>5,294</b>	<b>3,898</b>	<b>15,119,568</b>	<b>342,278</b>	<b>TOTAL</b>

**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	107'	N/A	107'	N/A
Shale/ Siltstone	30	285	30	285
Sandstone	285	425	285	425
Shale/ Siltstone	425	645	425	645
Sandstone	645	725	645	725
Limestone	725	805	725	805
Sandstone/ Shale	805	905	805	905
Shale	905	985	905	985
Sandstone	985	1305	985	1305
Siltstone	1305	1405	1305	1405
Sandstone	1405	1465	1405	1465
Sandstone	1465	1625	1465	1625
Shale / Sandstone	1625	1685	1625	1685
Sandstone	1685	2009	1685	2009
Big Lime	2009	2553	2009	2599
Gantz	2553	2857	2599	2912
Fifty Foot Sandstone	2857	2969	2912	3027
Gordon	2969	3339	3027	3409
Fifth Sandstone	3339	3415	3409	3487
Bayard	3415	3911	3487	3997
Speechley	3911	4160	3997	4254
Baltown	4160	4636	4254	4745
Bradford	4636	4994	4745	5117
Benson	4994	5226	5117	5357
Alexander	5226	5517	5357	5657
Elk	5517	5809	5657	5958
Rhinestreet	5809	6128	5958	6307
Sycamore	6128	6225	6307	6432
Middlesex	6225	6331	6432	6603
Burkett	6331	6359	6603	6666
Tully	6359	6382	6666	6731
Marcellus	6382	NA	6731	NA

# Hydraulic Fracturing Fluid Product Component Information Disclosure

**Job Start Date:** 1/26/2017  
**Job End Date:** 3/10/2017  
**State:** West Virginia  
**County:** Ritchie  
**API Number:** 47-085-10171-00-00  
**Operator Name:** Antero Resources Corporation  
**Well Name and Number:** Piedmont 1H  
**Latitude:** 39.32021667  
**Longitude:** -80.93834167  
**Datum:** NAD27  
**Federal Well:** NO  
**Indian Well:** NO  
**True Vertical Depth:** 6,450  
**Total Base Water Volume (gal):** 14,350,682  
**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	Operator	Base Fluid					
			Water	7732-18-5	100.00000	88.60844	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.12663	



HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor							
					Listed Below				
SAND-COMMON WHITE - 100 MESH	Halliburton	Proppant							
					Listed Below				
WG-36 GELLING AGENT	Halliburton	Gelling Agent							
					Listed Below				
SAND-PREMIUM WHITE-30/50	Halliburton	Proppant							
					Listed Below				
SP BREAKER	Halliburton	Breaker							
					Listed Below				
SAND-PREMIUM WHITE-40/70	Halliburton	Proppant							
					Listed Below				
FR-76	Halliburton	Friction Reducer							
					Listed Below				
LP-70	Halliburton	Scale Inhibitor							
					Listed Below				

HYDROCHLORIC ACID	Halliburton	Solvent								
				Listed Below						
MC B-8614	Halliburton	Biocide								
				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	11.20717				
			Guar gum	9000-30-0	100.00000	0.02719				
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01708				
			Inorganic salt	Proprietary	30.00000	0.01708				
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01708				Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Hydrochloric acid	7647-01-0	15.00000	0.01148				
			Ethylene Glycol	107-21-1	60.00000	0.00850				
			Glutaraldehyde	111-30-8	30.00000	0.00269				
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00142				
			Sodium persulfate	7775-27-1	100.00000	0.00047				
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00045				
			Methanol	67-56-1	60.00000	0.00009				
			Ethanol	64-17-5	1.00000	0.00009				
			Fatty acids, tall oil	Proprietary	30.00000	0.00004				
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00004				

		Ethoxylated alcohols	Proprietary	30.00000	0.00004			
		Olefins	Proprietary	5.00000	0.00002			
		Propargyl alcohol	107-19-7	10.00000	0.00001			
		Phosphoric acid	7664-38-2	0.10000	0.00001			
		Sodium sulfate	7757-82-6	0.10000	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(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°20'00"

6,132'

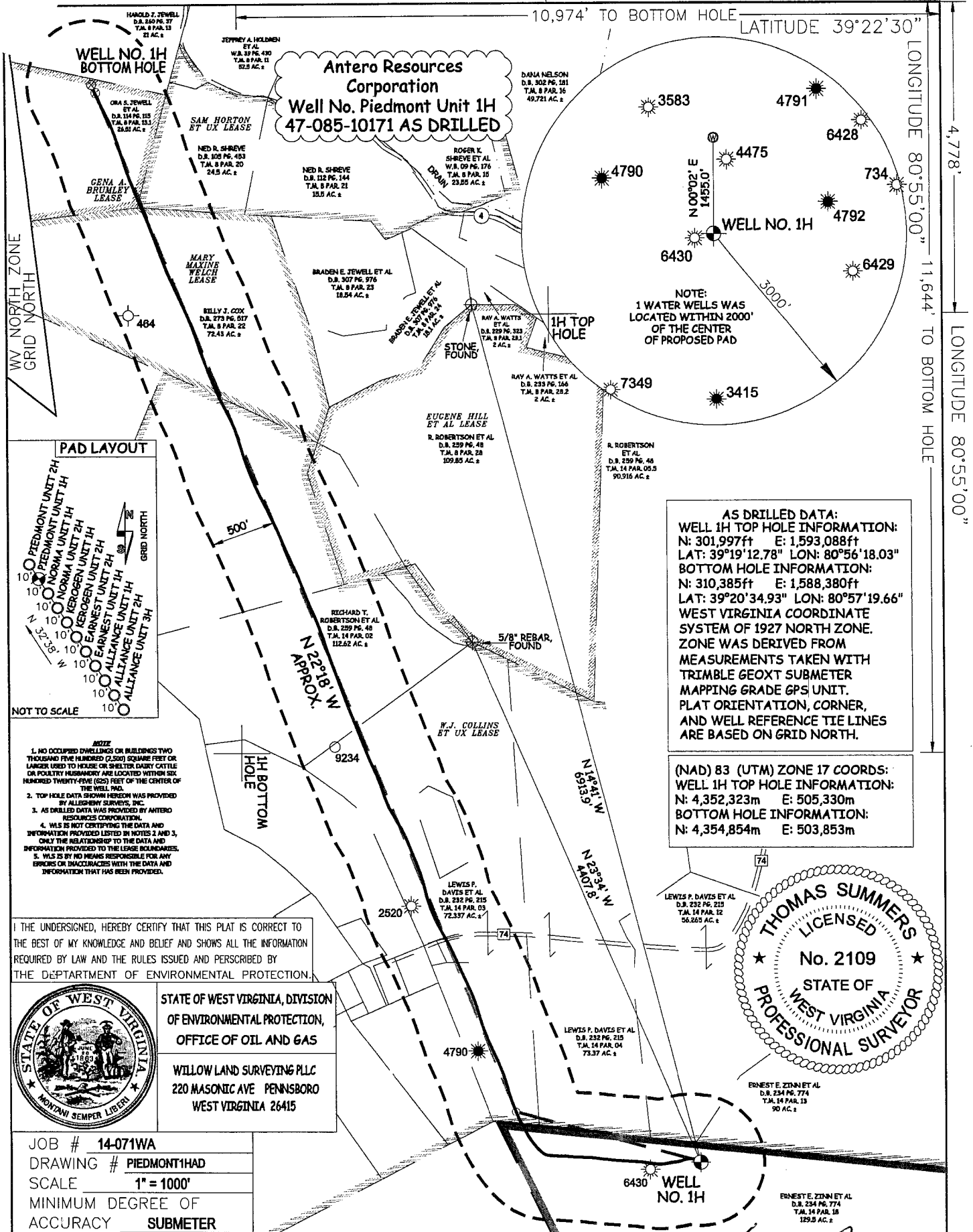
10,974' TO BOTTOM HOLE

LATITUDE 39°22'30"

LONGITUDE 80°55'00"

4,778'

LONGITUDE 80°55'00"

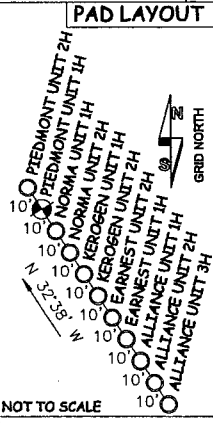
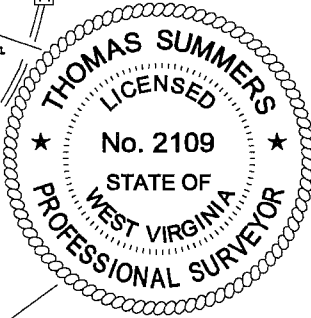


**Antero Resources Corporation**  
**Well No. Piedmont Unit 1H**  
**47-085-10171 AS DRILLED**

NOTE:  
 1 WATER WELLS WAS  
 LOCATED WITHIN 2000'  
 OF THE CENTER  
 OF PROPOSED PAD

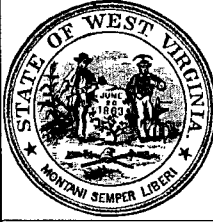
**AS DRILLED DATA:**  
**WELL 1H TOP HOLE INFORMATION:**  
 N: 301,997ft E: 1,593,088ft  
 LAT: 39°19'12.78" LON: 80°56'18.03"  
**BOTTOM HOLE INFORMATION:**  
 N: 310,385ft E: 1,588,380ft  
 LAT: 39°20'34.93" LON: 80°57'19.66"  
 WEST VIRGINIA COORDINATE  
 SYSTEM OF 1927 NORTH ZONE.  
 ZONE WAS DERIVED 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: 4,352,323m E: 505,330m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,354,854m E: 503,853m



- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,000) 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 ALLEGHENY SURVEYS, INC.
  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 # 14-071WA  
 DRAWING # PIEDMONT1HAD  
 SCALE 1" = 1000'  
 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*  
 THOMAS SUMMERS P.S. 2109  
 DATE 09/29/17  
 OPERATOR'S WELL # PIEDMONT UNIT #1H

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