

PM

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

API 47-017-06562 County Doddridge District Central
Quad Oxford 7.5' Pad Name Primm Pad Field/Pool Name ----
Farm name Primm, Olin E. & Mary Well Number Bierstadt Unit 2H
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 4343571m Easting 512709m
Landing Point of Curve Northing 4343296.29m Easting 512811.65m
Bottom Hole Northing 4340627m Easting 514083m

Elevation (ft) 1008' 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

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Date permit issued 9/3/2014 Date drilling commenced 1/24/2015 Date drilling ceased 5/2/2015
Date completion activities began 5/22/2015 Date completion activities ceased 5/31/2015
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 225' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 743', 2147' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 437' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

PK

10/30/2015

API 47-017 - 06562

Farm name Primm, Olin E. & Mary

Well number Bierstadt 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	30"	20"	40'	New	94# H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	358'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2527'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	16951'	New	23# P-110	N/A	Y
Tubing		2-3/8"	6651'		4.7# N-80	N/A	
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	150 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	429 sx	15.6	1.18	249	0'	8 Hrs.
Coal							
Intermediate 1	Class A	935 sx	15.6	1.18	791	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	989 sx (Lead) 1592 sx (Tail)	14.5 Lead 15.2 Tail	1.30 Lead 1.85 Tail	3419	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16951' MD, 6438' TVD (BHL), 6572' (Deepest Point Drilled)

Loggers TD (ft) 16900'

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6009'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Callie Unit 2H API #47-017-06193). Please reference the wireline logs submitted with Form WR-35 for Callie Unit 2H. 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 _____

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API 47- 017 - 06562 Farm name Primm, Olin E. & Mary Well number Bierstadt Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6524' (TOP)</u> TVD	<u>6690' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 1623 mcfpd Oil 11 bpd NGL --- bpd Water 127 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)
	<u>0</u>		<u>0</u>		

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Rd. City Williamsport State PA Zip 17701

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company US Well Services
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature [Signature] Title Permit Representative Date 10/15/2015

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

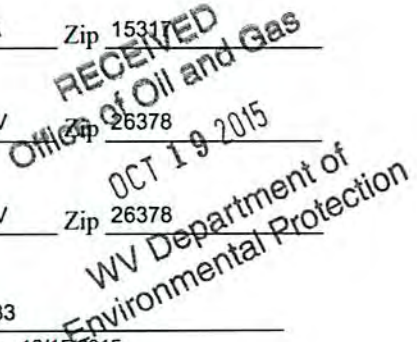


EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	22-May-15	16,692	16,860	60	Marcellus
2	4-Jun-15	16,493	16,661	60	Marcellus
3	5-Jun-15	16,293	16,461	60	Marcellus
4	5-Jun-15	16,094	16,262	60	Marcellus
5	5-Jun-15	15,895	16,063	60	Marcellus
6	5-Jun-15	15,696	15,864	60	Marcellus
7	6-Jun-15	15,496	15,664	60	Marcellus
8	6-Jun-15	15,297	15,465	60	Marcellus
9	6-Jun-15	15,098	15,266	60	Marcellus
10	6-Jun-15	14,899	15,067	60	Marcellus
11	7-Jun-15	14,699	14,867	60	Marcellus
12	7-Jun-15	14,500	14,668	60	Marcellus
13	7-Jun-15	14,301	14,469	60	Marcellus
14	7-Jun-15	14,102	14,270	60	Marcellus
15	8-Jun-15	13,902	14,070	60	Marcellus
16	8-Jun-15	13,703	13,871	60	Marcellus
17	8-Jun-15	13,504	13,672	60	Marcellus
18	8-Jun-15	13,305	13,473	60	Marcellus
19	9-Jun-15	13,105	13,273	60	Marcellus
20	9-Jun-15	12,906	13,074	60	Marcellus
21	9-Jun-15	12,707	12,875	60	Marcellus
22	9-Jun-15	12,507	12,676	60	Marcellus
23	9-Jun-15	12,308	12,476	60	Marcellus
24	10-Jun-15	12,109	12,277	60	Marcellus
25	10-Jun-15	11,910	12,078	60	Marcellus
26	10-Jun-15	11,710	11,879	60	Marcellus
27	10-Jun-15	11,511	11,679	60	Marcellus
28	11-Jun-15	11,312	11,480	60	Marcellus
29	11-Jun-15	11,113	11,281	60	Marcellus
30	11-Jun-15	10,913	11,081	60	Marcellus
31	11-Jun-15	10,714	10,882	60	Marcellus
32	12-Jun-15	10,515	10,683	60	Marcellus
33	12-Jun-15	10,316	10,484	60	Marcellus
34	12-Jun-15	10,116	10,284	60	Marcellus
35	12-Jun-15	9,917	10,085	60	Marcellus
36	12-Jun-15	9,718	9,886	60	Marcellus
37	13-Jun-15	9,519	9,687	60	Marcellus
38	13-Jun-15	9,319	9,487	60	Marcellus
39	13-Jun-15	9,120	9,288	60	Marcellus
40	13-Jun-15	8,921	9,089	60	Marcellus
41	14-Jun-15	8,722	8,890	60	Marcellus
42	14-Jun-15	8,522	8,690	60	Marcellus
43	14-Jun-15	8,323	8,491	60	Marcellus
44	14-Jun-15	8,124	8,292	60	Marcellus
45	15-Jun-15	7,925	8,093	60	Marcellus
46	15-Jun-15	7,725	7,893	60	Marcellus
47	16-Jun-15	7,526	7,694	60	Marcellus
48	16-Jun-15	7,327	7,495	60	Marcellus
49	16-Jun-15	7,127	7,296	60	Marcellus
50	16-Jun-15	6,928	7,096	60	Marcellus
51	16-Jun-15	6,729	6,897	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	4-Jun-15	49.9	8,290	N/A	4,267	9,240	6,080	N/A
2	4-Jun-15	61.4	6,822	6,747	3,289	201,460	7,132	N/A
3	5-Jun-15	63.4	6,856	6,644	3,455	247,900	6,718	N/A
4	5-Jun-15	56.4	6,727	6,778	4,049	127,660	7,095	N/A
5	5-Jun-15	62.5	6,944	6,641	4,413	117,600	7,275	N/A
6	5-Jun-15	62.4	7,188	6,547	4,145	96,400	6,229	N/A
7	6-Jun-15	59.3	6,756	5,823	4,664	185,680	6,372	N/A
8	6-Jun-15	60.5	6,863	5,669	4,967	156,660	6,742	N/A
9	6-Jun-15	61.4	6,933	5,561	4,038	188,240	7,110	N/A
10	6-Jun-15	54.9	6,955	5,585	4,187	66,740	6,869	N/A
11	7-Jun-15	57.9	6,664	6,038	4,463	182,280	6,860	N/A
12	7-Jun-15	59.5	6,742	5,753	4,149	246,200	6,710	N/A
13	7-Jun-15	62.3	6,766	5,643	4,418	211,460	6,913	N/A
14	7-Jun-15	62.4	6,629	5,733	4,017	240,870	6,601	N/A
15	8-Jun-15	60.3	6,842	5,540	4,664	168,920	6,865	N/A
16	8-Jun-15	67.4	7,136	5,669	4,353	139,010	7,030	N/A
17	8-Jun-15	67.5	7,085	5,960	4,772	126,500	6,479	N/A
18	8-Jun-15	61.4	7,055	5,739	4,251	127,200	6,655	N/A
19	9-Jun-15	64.6	6,962	5,748	4,383	133,300	6,737	N/A
20	9-Jun-15	58.8	6,608	5,871	4,800	141,500	6,485	N/A
21	9-Jun-15	60.6	7,171	5,490	4,979	92,930	6,324	N/A
22	9-Jun-15	65.8	6,806	5,711	5,229	176,700	6,749	N/A
23	9-Jun-15	63.3	6,525	5,321	4,705	178,970	6,857	N/A
24	10-Jun-15	64.3	6,918	5,688	4,866	140,946	5,839	N/A
25	10-Jun-15	71.6	7,131	5,814	5,293	180,990	6,858	N/A
26	10-Jun-15	72.4	7,234	5,806	4,908	204,500	6,830	N/A
27	10-Jun-15	73.7	6,785	5,502	5,024	244,000	6,306	N/A
28	11-Jun-15	77.1	6,972	5,653	5,260	240,000	6,290	N/A
29	11-Jun-15	73.2	6,830	5,620	5,002	241,100	6,381	N/A
30	11-Jun-15	72.1	6,917	5,448	5,097	240,800	6,810	N/A
31	11-Jun-15	73.9	6,681	5,279	4,591	233,800	6,102	N/A
32	12-Jun-15	74.6	6,812	5,241	4,976	242,050	6,322	N/A
33	12-Jun-15	74.0	6,996	5,541	3,940	224,340	6,748	N/A
34	12-Jun-15	72.0	6,833	5,714	4,555	240,560	6,148	N/A
35	12-Jun-15	73.4	6,636	5,504	5,053	240,500	6,433	N/A
36	12-Jun-15	73.2	6,784	5,187	5,200	205,300	6,632	N/A
37	13-Jun-15	66.7	6,857	5,974	5,202	139,150	6,658	N/A
38	13-Jun-15	70.7	7,096	5,774	5,056	205,410	6,373	N/A
39	13-Jun-15	46.1	8,449	6,054	4,977	6,000	5,504	N/A
40	13-Jun-15	68.4	7,424	6,419	4,242	212,600	6,638	N/A
41	14-Jun-15	73.1	6,696	5,757	5,017	243,100	6,066	N/A
42	14-Jun-15	68.6	6,468	5,437	4,394	140,000	5,990	N/A
43	14-Jun-15	67.6	6,546	5,354	3,940	176,300	6,601	N/A
44	14-Jun-15	68.1	6,530	5,304	4,062	242,900	6,024	N/A
45	15-Jun-15	60.6	7,372	5,614	5,082	112,620	6,049	N/A
46	15-Jun-15	48.7	7,835	5,384	4,190	76,100	6,547	N/A
47	16-Jun-15	69.7	7,333	6,658	4,434	159,660	6,569	N/A
48	16-Jun-15	66.8	6,412	6,066	4,804	224,100	5,785	N/A
49	16-Jun-15	67.4	6,510	6,611	4,526	207,480	5,623	N/A
50	16-Jun-15	67.2	6,390	6,105	5,196	232,600	5,812	N/A
51	16-Jun-15	73.3	6,329	5,667	4,457	242,900	6,504	N/A
AVG=		65.3	6,924	5,808	4,588	9,063,226	331,329	

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LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	225'	N/A	225'	N/A
Shale	0	227	0	227
Sandstone	est. 227	437	est. 227	437
Coal	est. 437	457	est. 437	457
Sandy shale	est. 457	477	est. 457	477
Shale	est. 477	595	est. 477	595
Sandstone	est. 595	605	est. 595	605
Shale	est. 605	625	est. 605	625
Sandstone	est. 625	638	est. 625	638
Shale	est. 638	659	est. 638	659
Sandstone	est. 659	808	est. 659	808
Shale	est. 808	1175	est. 808	1175
Sandy shale	est. 1175	1235	est. 1175	1235
Trace coal	est. 1235	1257	est. 1235	1257
Shale	est. 1257	1421	est. 1257	1421
Sandstone	est. 1421	1445	est. 1421	1445
Sandy shale	est. 1445	1477	est. 1445	1477
Trace coal/shale	est. 1477	1542	est. 1477	1542
Sandstone	est. 1542	1683	est. 1542	1683
Sandy shale	est. 1683	1960	est. 1683	1965
Big Lime	1960	2002	1965	2007
Big Injun	2002	2294	2007	2299
Weir	2294	2581	2299	2586
Fifty Foot Sandstone	2581	2789	2586	2794
Gordon	2789	3033	2794	3038
Fifth Sandstone	3033	3076	3038	3081
Bayard	3076	3379	3081	3384
Speechley	3379	4068	3384	4073
Baltown	4068	4522	4073	4527
Bradford	4522	4938	4527	4943
Benson	4938	5201	4943	5206
Alexander	5201	6171	5206	6179
Sycamore	6171	6345	6179	6374
Middlesex	6345	6466	6374	6552
Burkett	6466	6494	6552	6610
Tully	6494	6524	6610	6690
Marcellus	6524	NA	6690	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/4/2015
Job End Date:	6/16/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06562-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Bierstadt Unit 2H
Longitude:	-80.85273100
Latitude:	39.24135600
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,572
Total Base Water Volume (gal):	14,600,398
Total Base Non Water Volume:	503,810



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
Water	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	92.56970	
Sand	J.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	6.89003	
GC-15	J.S. Well Services	Gelling Agents	Guar Gum	3000-30-0	50.00000	0.09615	
			Petroleum Distillates	34742-47-8	60.00000	0.09106	
			Suspending agent (solid)	14808-60-7	3.00000	0.01471	
			Surfactant	38439-51-0	3.00000	0.00577	
HCL Acid (12.6%-18.0%)	J.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.16072	
WFRA-405	J.S. Well Services	Friction Reducer	Hydrogen Chloride	7647-01-0	18.00000	0.03839	
			Anionic Polyacrylamide	Proprietary	40.00000	0.03471	
			Water	7732-18-5	40.00000	0.03471	
			Sodium Chloride	7647-14-5	20.00000	0.01735	
			Petroleum Distillates	34742-47-8	20.00000	0.01397	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00434	

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SI-1100	J.S. Well Services	Scale Inhibitor					
		Water	7732-18-5		80.00000		0.01031
		Ethylene Glycol	107-21-1		25.00000		0.00364
		Copolymer of Maleic and Acrylic acid	52255-49-9		10.00000		0.00152
		Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8		7.50000		0.00131
		Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1		5.00000		0.00084
		Phosphino carboxylic acid polymer	71050-62-0		5.00000		0.00084
		Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5		2.00000		0.00034
K-BAC 1020	J.S. Well Services	Anti-Bacterial Agent					
		2,2-dibromo-3-nitropropionamide	10222-01-2		20.00000		0.00440
		Deionized Water	7732-18-5		28.00000		0.00251
AP One	J.S. Well Services	Gel Breakers					
		Ammonium Persulfate	7727-54-0		100.00000		0.00237
AI-301	J.S. Well Services	Acid Corrosion Inhibitors					
		Diethylene Glycol	111-46-6		30.00000		0.00012
		Methanamine	100-97-0		20.00000		0.00010
		Polyethylene polyamine	38603-67-8		10.00000		0.00004
		Hydrogen Chloride	7647-01-0		10.00000		0.00004
		Coco amine	81791-14-8		5.00000		0.00002

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or 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. 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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LATITUDE 39°15'00"

5,542'

1,049' TO BOTTOM HOLE

LATITUDE 39°15'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

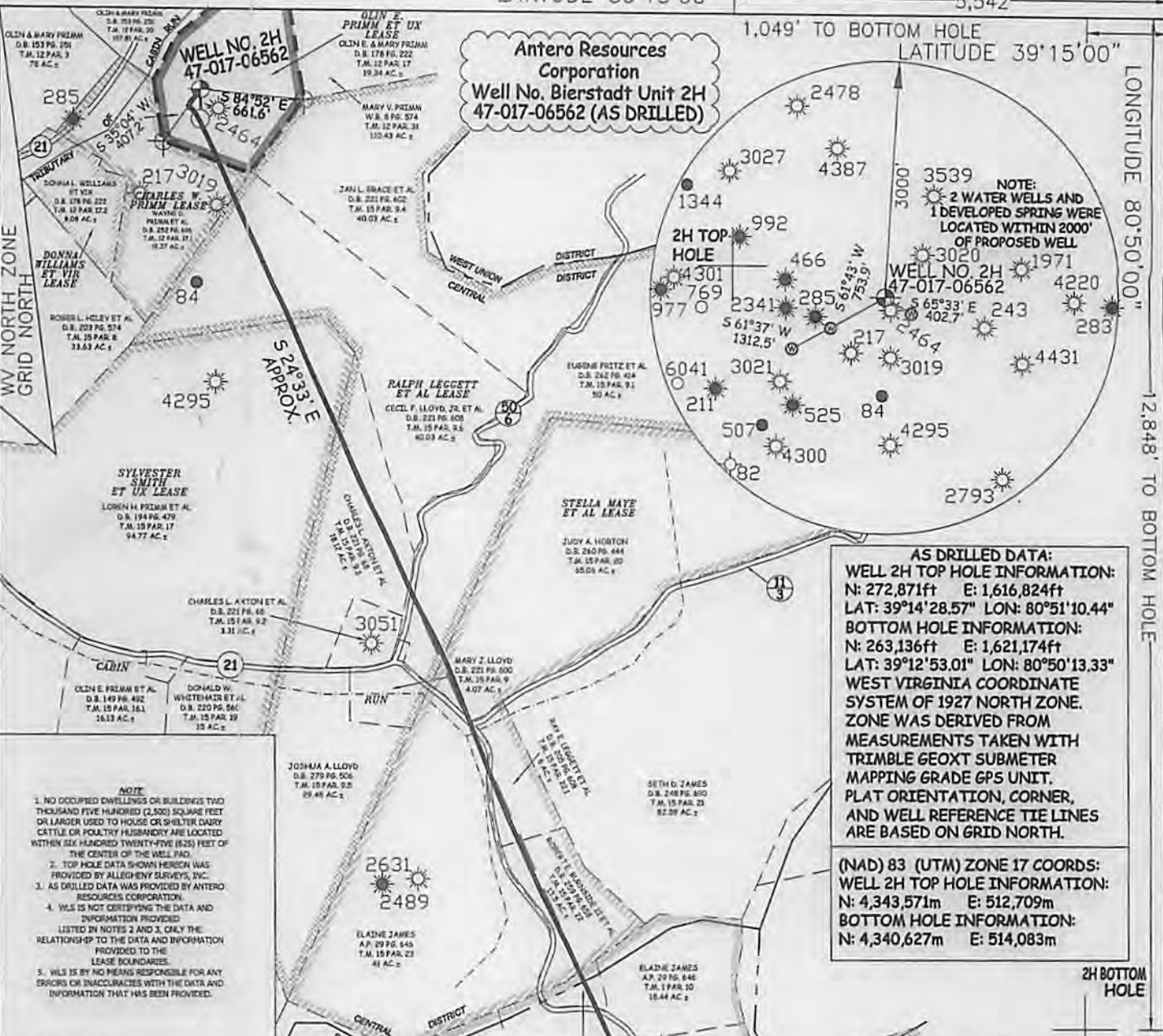
LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Bierstadt Unit 2H
47-017-06562 (AS DRILLED)



AS DRILLED DATA:

WELL 2H TOP HOLE INFORMATION:
 N: 272,871ft E: 1,616,824ft
 LAT: 39°14'28.57" LON: 80°51'10.44"

BOTTOM HOLE INFORMATION:
 N: 263,136ft E: 1,621,174ft
 LAT: 39°12'53.01" LON: 80°50'13.33"

WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 6EOXT 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: 4,343,571m E: 512,709m

BOTTOM HOLE INFORMATION:
 N: 4,340,627m E: 514,083m

- 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 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 RECORDS.
 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, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 14-060WA
 DRAWING # BIERSTADT2HAD
 SCALE 1" = 1000
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND

---	Surface Owner Boundary Lines +/-
- - -	Interior Surface Tracts +/-
X	Existing Fence
⊕	Found monument, as noted
○	Proposed Well Path
⊙	As Drilled Well Path

DATE 07/10/15
 OPERATOR'S WELL# BIERSTADT UNIT #2H

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 1,030 ORIGINAL - 1,008' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE OXFORD 7.5' DISTRICT CENTRAL COUNTY BOONVILLE

SURFACE OWNER OLIN E. & MARY PRIMM ACREAGE 19.34 ACRES +/-
 OIL & GAS ROYALTY OWNER OLIN E. PRIMM ET UX; CHARLES W. PRIMM; LEASE ACREAGE 19.34 ACRES +/-; 19.37 ACRES +/-
 RALPH L. LEGGETT ET AL; SYLVESTER SMITH ET UX; STELLA MAYE ET AL; BILLY JOE GARNER ET AL; DONALD BRUEHNIG; D.M. HAUGHT ET AL; BRADLEY LEGGETT ET AL; OKEY LEGGETT 107 ACRES +/-; 210 ACRES +/-; 126.5 ACRES +/-; 61.79 ACRES +/-; 30.33 ACRES +/-; 12 ACRES +/-; 10.5 ACRES +/-; 141 ACRES +/-

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,438' TVD 16,951' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

017-06562

API WELL # 47 STATE COUNTY PERMIT

10/30/2015

RECEIVED

DEPARTMENT OF OIL AND GAS

PERMIT