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WR-35
Rev (9-11)

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

DATE: 11/20/2013
API #: 47-017-06102

Farm name: Erwin, John F. Operator Well No.: Hinterer Unit 1H

LOCATION: Elevation: 1,218' Quadrangle: New Milton 7.5

District: New Milton County: Doddridge
Latitude: 8.287 Feet South of 39 Deg. 10 Min. 00 Sec.
Longitude 3658' Feet West of 80 Deg. 40 Min. 00 Sec.

Company: Antero Resources Corporation

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
1625 17th Street Denver, CO 80202	20" 51#	46'	46'	44 Cu. Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	376'	376'	522 Cu. Ft. Class A
Inspector: Douglas Newlon	9 5/8" 36#	2,458'	2,458'	1000 Cu. Ft. Class A
Date Permit Issued: 7/23/2012	5 1/2" 20#	15,862'	15,862'	3967 Cu. Ft. Class H
Date Well Work Commenced: 1/17/2013				
Date Well Work Completed: 5/29/2013	2 3/8" 4.7#	7471'		
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 7219' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 15862' MD, 7124' TVD (BHL)				
Fresh Water Depth (ft.): 171'				
Salt Water Depth (ft.): 762', 857', 1130'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 680', 1850'				
Void(s) encountered (N/Y) Depth(s) None				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7183' (TOP)

Gas: Initial open flow --- MCF/d Oil: Initial open flow --- Bbl/d

Final open flow 5,634 MCF/d Final open flow --- Bbl/d

Time of open flow between initial and final tests --- Hours

Static rock Pressure 3950 psig (surface pressure) after --- Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Kaiten Buck
Signature

2/10/2014
Date

05/30/2014

17-06102

Were core samples taken? Yes _____ No

Were cuttings caught during drilling? Yes _____ No

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Yes, CBL

This is a subsequent well. Antaro only runs wireline logs on the first well on a multi-well pad (Hinterer Unit 2H API#47-017-06104). Please reference the wireline logs submitted with Form WR-35 for Hinterer Unit 2H.

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Perforations: 7,298'- 15,805' (1860 Holes)

Frac'd w/ 17,000 gals 15% HCL Acid, 192,667 bbls Slick Water carrying 755,440# 100 mesh, 2,967,073# 40/70 sand and 1,514,742# 20/40 sand.

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth	/	Bottom Depth
<u>Surface:</u>			

Big Lime	est 2242'		2370'
Big Injun	est 2371'		2602'
Gantz Sand	est 2603'		2755'
Fifty Foot Sandstone	est 2756'		2947'
Gordon	est 2948'		3303'
Fifth Sandstone	est 3304'		3351'
Bayard	est 3352'		3941'
Speechley	est 3942'		4138'
Balltown	est 4139'		4779'
Bradford	est 4780'		5232'
Benson	est 5233'		5499'
Alexander	est 5500'		5707'
Elk	est 5708'		6247'
Rhinestreet	est 6248'		6749'
Sycamore	6750'		6928'
Middlesex	6929'		7071'
Burkett	7072'		7103'
Tully	7104'		7172'
Hamilton	7173'		7182'
Marcellus	7183'		7219' TVD

05/30/2014

17-06102

Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	5/24/2013
Job End Date:	6/3/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06102-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hinterer Unit 1H
Longitude:	-80.69520800
Latitude:	39.15671700
Datum:	NAD83
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	8,091,048
Total Base Non Water Volume:	262,112

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	92.72993	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	6.94113	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.08515	
			Hydrogen Chloride	7641-01-1	18.00000	0.02034	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			Water	7732-18-5	40.00000	0.02665	
			Anionic Polyacrylamide	Proprietary	40.00000	0.02665	
			Petroleum Distillates	64742-47-8	40.00000	0.02145	
			Crystalline Salt	12125-02-9	5.00000	0.00333	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00333	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.03084	
			Petroleum Distillates	64742-47-8	60.00000	0.02921	
			Suspending agent (solid)	14808-60-7	3.00000	0.00472	
			Surfactant	68439-51-0	3.00000	0.00185	

17-06102

Hi Flow 3-NE	U.S. Well Services, LLC	Surfactant				
			Propylene Glycol	57-55-6	30.00000	0.02782
			Oxirane, methyl-, polymer with oxirane, mono(2-ethylhexyl) ether	64366-70-7	13.00000	0.01152
			Propylene Glycol n-butyl ether	5131-66-8	5.00000	0.00394
			D-Limonene	8028-48-6	5.00000	0.00376
			Isopropyl Alcohol	67-63-0	5.00000	0.00354
			1-Decanol	112-30-1	2.50000	0.00195
			1-Octanol	111-87-5	2.50000	0.00186
SI-1000	U.S. Well Services, LLC	Scale Inhibitor				
			Anionic Copolymer	Proprietary		0.00442
			Ethylene Glycol	107-21-1	20.00000	0.00400
			Water	7732-18-5	30.00000	0.00333
BioClear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00498
			Deionized Water	7732-18-5	28.00000	0.00285
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitor				
			Ethylene Glycol	107-21-1	40.00000	0.00044
			N,N-Dimethylformamide	68-12-2	20.00000	0.00013
			Cinnamaldehyde	104-55-2	15.00000	0.00012
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00012
			2-Butoxyethanol	111-76-2	15.00000	0.00010
			Poly(oxy-1,2-ethanediyl), alpha-(4-nolylphenyl)-omega-hydroxy, branched	127087-87-0	5.00000	0.00004
			1-Decanol	112-30-1	5.00000	0.00003
			1-Octanol	111-87-5	3.00000	0.00002
			Isopropyl Alcohol	67-63-0	2.50000	0.00002
AP One	U.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00098

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)