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Rev (9-11)

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

DATE: 8/13/2013  
API #: 47-085-09970

Farm name: O'Neil Family trust et al Operator Well No.: Prunty Unit 1H

LOCATION: Elevation: 1,142' Quadrangle: Pullman 7.5'

District: Union County: Ritchie  
Latitude: 4.351' Feet South of 39 Deg. 12 Min. 30 Sec.  
Longitude 6.310' Feet West of 80 Deg. 52 Min. 30 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" 94#	41'	41'	62 Cu. Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	572'	572'	795 Cu. Ft. Class A
Inspector: <b>David Cowan</b>	9 5/8" 36#	2519'	2519'	1026 Cu. Ft. Class A
Date Permit Issued: 9/14/2012	5 1/2" 20#	14329'	14329'	3527Cu. Ft. Class H
Date Well Work Commenced: 1/19/2013				
Date Well Work Completed: 7/10/2013	2 3/8" 4.7#	6,873'		
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): 6607' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 14,329' MD, 6600'TVD (BHL)				
Fresh Water Depth (ft.): 44', 60'				
Salt Water Depth (ft.): 1934', 1988'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): None Available				
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) 6554' (TOP)

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

Final open flow 8,258 MCF/d Final open flow ---- Bbl/d

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

Static rock Pressure 3000 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.

*Karen Buck*  
Signature

12/23/2013  
Date

04/04/2014

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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

**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: 7,002'- 14,275' (3,432 Holes)

Frac'd w/ 74,000 gals HCL Acid, 271,715 bbls Slick Water carrying 1,984,688# 100 Mesh,  
3,952,250# 40/70 sand and 1,840,361# 20/40 sand.

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

Formations Encountered:	Top Depth	/	Bottom Depth
<u>Surface:</u>			
Fifth Sandstone	3058'		3176'
Bayard	3177'		4042'
Speechley	4043'		4269'
Balltown	4270'		6712'
Bradford	6713'		4991'
Benson	4992'		5230'
Alexander	5231'		5406'
Elk	5407'		6864'
Rhinestreet	6865'		6225'
Sycamore	6226'		6390'
Middlesex	6391'		6505'
Burkett	6506'		6533'
Tully	6534'		6553'
Marcellus	6554'		6607' TVD

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85-09970

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/19/2013
Job End Date:	7/10/2013
State:	West Virginia
County:	Ritchie
API Number:	47-085-09970-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Prunty Unit 1H
Longitude:	-80.89035000
Latitude:	39.19101110
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,607
Total Base Water Volume (gal):	12,279,605
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					
			Fresh Water	7732-18-5	100.00000	92.21395	Density = 8.330
40/70 White	Halliburton	Proppant					
			Crystalline Silica, Quartz	14808-60-7	100.00000	3.56959	
100m White	Halliburton	Proppant					
			Crystalline Silica, Quartz	14808-60-7	100.00000	1.79155	
30/50 White	Halliburton	Proppant					
			Crystalline Silica, Quartz	14808-60-7	100.00000	1.65650	
FE ACID - >10% HCL	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	30.00000	0.18134	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02049	
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
			Guar gum	9000-30-0	100.00000	0.01614	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00606	
			Acetic acid	64-19-7	60.00000	0.00364	
FE-2A	Halliburton	Additive					



01660-58  
85-09970

			Citric acid	77-92-9	60.00000	0.00419
BE-9	Halliburton	Biocide				
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00403
Scalechek LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor				
			Ammonium chloride	12125-02-9	10.00000	0.00248
GBW-30 BREAKER	Halliburton	Breaker				
			Carbohydrates	Confidential	100.00000	0.00088
			Hemicellulase enzyme	9012-54-8	30.00000	0.00027
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor				
			Methanol	67-56-1	60.00000	0.00030
			Propargyl alcohol	107-19-7	10.00000	0.00005
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.						
		Other Ingredient(s)				
			Water	7732-18-5		0.70478
		Other Ingredient(s)				
			Polyacrylamide copolymer	Confidential		0.02049
		Other Ingredient(s)				
			Organic phosphonate	Confidential		0.01490
		Other Ingredient(s)				
			Acetic acid	64-19-7		0.00604
		Other Ingredient(s)				
			Acetic anhydride	108-24-7		0.00604
		Other Ingredient(s)				
			Citric acid	77-92-9		0.00604
		Other Ingredient(s)				
			Fatty acid tall oil amide	Confidential		0.00342
		Other Ingredient(s)				
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00342
		Other Ingredient(s)				
			Sodium chloride	7647-14-5		0.00342
		Other Ingredient(s)				
			Ammonium chloride	12125-02-9		0.00342
		Other Ingredient(s)				
			Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00081
		Other Ingredient(s)				
			Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00068
		Other Ingredient(s)				
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00068
		Other Ingredient(s)				
			Formaldehyde	50-00-0		0.00025
		Other Ingredient(s)				



2660-58

		Surfactant mixture	Confidential		0.00016
	Other Ingredient(s)				
		Silica gel	112926-00-8		0.00016
	Other Ingredient(s)				
		Surfactant mixture	Confidential		0.00016
	Other Ingredient(s)				
		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00015
	Other Ingredient(s)				
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00015
	Other Ingredient(s)				
		Fatty acids, tall oil	Confidential		0.00015
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Crystalline Silica, Quartz	14808-60-7		0.00002
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Olefins	Confidential		0.00001

\* 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)