

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: 9/3/2013  
API #: 47-017-06117

Farm name: David Thompson, et al Operator Well No.: Kemper Unit 1H

LOCATION: Elevation: 1,269' Quadrangle: Folsom 7.5'

District: McClellan County: Doddridge  
Latitude: 4,871' Feet South of 39 Deg. 25 Min. 00 Sec.  
Longitude 11,899' Feet West of 80 Deg. 32 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#	40'	40'	38 Cu Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	417'	417'	579 Cu Ft. Class A
Inspector: Douglas Newlon	9 5/8" 36#	2,614'	2,614'	1064 Cu Ft. Class A
Date Permit Issued: 9/7/2012	5 1/2" 20#	13,611'	13,611'	3301 Cu Ft. Class H
Date Well Work Commenced: 12/5/2012				
Date Well Work Completed: 8/11/2013	2 3/8" 4.7#	7,459'		
Verbal Plugging: N/A				
Date Permission granted on: N/A		Top	Bottom	
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>	Cement Plug	6,600'	7,100'	512 Cu Ft. Class H
Total Vertical Depth (ft): 7509' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 13,611' MD				
Fresh Water Depth (ft.): 349'				
Salt Water Depth (ft.): None Available				
Is coal being mined in area (N/Y)? N				
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) 7400' (TOP)

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

Final open flow 7,779 MCF/d Final open flow --- Bbl/d

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

Static rock Pressure 3800 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

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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.

Keith Buck  
Signature

9/12/13  
Date

11/08/2013

17.06117

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, Dual Laterolog/ Gamma Ray and Photo density/ Compensated Neutron/ Gamma ray

**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:

Perforated: 7,822'- 13,546' (1,656 Holes)

Frac'd w/ 15,250 gals 15% HCL Acid, 137,884 bbls Slick Water carrying 928,341# 100 mesh

2,667,647# 40/70 Sand and 1,516,477# 20/40 Sand.

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

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

Big Lime	2225'	2335'
Big Injun	2336'	2591'
Gantz Sand	2592'	2771'
Fifty Foot Sandstone	2772'	2976'
Gordon	2977'	3289'
Fifth Sandstone	3290'	3343'
Bayard	3344'	3932'
Speechley	3933'	4306'
Balltown	4307'	4668'
Bradford	4669'	5328'
Benson	5329'	5594'
Alexander	5595'	5771'
Elk	5772'	6408'
Rhinestreet	6409'	6850'
Sycamore	6851'	7081'
Middlesex	7082'	7240'
Burkett	7241'	7267'
Tully	7268'	7350'
Hamilton	7351'	7399'
Marcellus	7400'	

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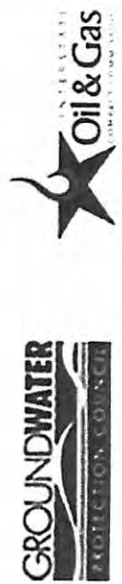
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7509' TVD Office of Oil and Gas  
WV Dept. of Environmental Protection

11/08/2013

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# Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	8/4/2013
Job End Date:	8/11/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06117-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Kemper Unit 1H
Longitude:	-80.55890000
Latitude:	39.38454720
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,509
Total Base Water Volume (gal):	7,747,404
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
Water	Operator	Carrier					
Sand, White, 40/70	Baker Hughes	Proppant	Water	7732-18-5	100.00000	90.71199	
Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00000	4.77523	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00000	2.81350	
HCl, 10.1-15%	Baker Hughes	Acidizing	Crystalline Silica (Quartz)	14808-60-7	100.00000	1.24738	
Oil	Baker Hughes		Water	7732-18-5	85.00000	0.17309	SmartCare Product
Oil	Baker Hughes		Hydrochloric Acid	7647-01-0	15.00000	0.03055	SmartCare Product
Oil	Baker Hughes	Gelling Agent	Guar Gum	9000-30-0	60.00000	0.05671	SmartCare Product
Oil	Baker Hughes		Petroleum Distillates	84742-47-8	30.00000	0.02836	SmartCare Product
Oil	Baker Hughes		Paraffinic Petroleum Distillate	84742-55-8	30.00000	0.02836	SmartCare Product
Oil	Baker Hughes		1-butoxy-2-propanol	5131-66-8	5.00000	0.00473	SmartCare Product
Oil	Baker Hughes		Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00473	SmartCare Product
Oil	Baker Hughes		Crystalline Silica: Quartz	14808-60-7	5.00000	0.00473	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer					

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Enzyme G-NE	Baker Hughes	Breaker	Petroleum Distillates	64742-47-8	30.00000	0.01506	SmartCare Product
			Water	7732-18-5	95.00000	0.01429	SmartCare Product
Alpha 1427	Baker Hughes	Biocide	Hemicellulase Enzyme Concentrate	9025-56-3	5.00000	0.00075	SmartCare Product
			Glutaraldehyde	111-30-8	30.00000	0.00696	SmartCare Product
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00232	SmartCare Product
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00116	SmartCare Product
			Ethanol	64-17-5	5.00000	0.00116	SmartCare Product
Scaletrol 720	Baker Hughes	Scale Inhibitor	Ethylene Glycol	107-21-1	30.00000	0.00480	SmartCare Product
			Calcium Chloride	10043-52-4	5.00000	0.00080	SmartCare Product
Ferrotrol 300L	Baker Hughes	Iron Control	Citric Acid	77-92-9	60.00000	0.00081	SmartCare Product
Cl-14	Baker Hughes	Corrosion Inhibitor	Methanol	67-56-1	100.00000	0.00032	SmartCare Product
			Polyoxyalkylenes	Trade Secret	30.00000	0.00009	SmartCare Product
			Fatty Acids	Trade Secret	10.00000	0.00003	SmartCare Product
			Propargyl Alcohol	107-19-7	5.00000	0.00002	SmartCare Product
			Olefin	Trade Secret	5.00000	0.00002	SmartCare Product
Ingredients shown above are subject to 29 CFR 1910.1200(j) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemicals							
			Water	7732-18-5		0.04769	
			Poly (acrylamide-co-acrylic acid)	Trade Secret		0.01506	
			Polyacrylate	Trade Secret		0.00320	
			Sorbitan Monooleate	Trade Secret		0.00251	
			Salt	Trade Secret		0.00251	
			Ethoxylated Alcohol	Trade Secret		0.00100	
			2-butoxy-1-propanol	15821-83-7		0.00008	
			Modified Thiorea Polymer	88527-49-1		0.00002	
			Potassium Chloride	7447-40-7		0.00001	
			Sodium Chloride	7647-14-5		0.00000	
			Hydrochloric Acid	7647-01-0		0.00000	
			Formaldehyde	50-00-0		0.00000	

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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)