

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: 8/7/2013
API #: 47-017-06094

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

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

District: New Milton County: Doddridge
Latitude: 8,140' Feet South of 39 Deg. 10 Min. 00 Sec.
Longitude 5,282' 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" 94#	56'	56'	54 Cu. Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	340'	340'	472 Cu. Ft. Class A
Inspector: Douglas Newlon	9 5/8" 36#	2,465'	2,465'	1358 Cu. Ft. Class A
Date Permit Issued: 7/27/2012	5 1/2" 20#	14,041'	14,041'	3462 Cu. Ft. Class H
Date Well Work Commenced: 10/18/12				
Date Well Work Completed: 4/6/13	2 3/8" 4.7#	7,444'		
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): 7223' TVD (deepest point drilled)				
Total Measured Depth (ft): 14,041' MD, 7172' TVD (BHL)				
Fresh Water Depth (ft.): 295'				
Salt Water Depth (ft.): 1054'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 240', 455', 765'				
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) 7,197' TVD (Top)

Gas: Initial open flow --- MCF/d Oil: Initial open flow --- Bbl/d
Final open flow 7,185 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

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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.

Kaiten Buck
Signature

11/22/13
Date

01/10/2014

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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

This is a subsequent well. Antero only runs wire-line logs on the first well on a multi-well pad (Ruckman Unit 2H AP#47-017-06095). Please reference the wire-line logs submitted with Form WR-35 for Ruckman 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: 7,530' - 13,985' MD (1,368 holes)

Frac'd w/ 10,000 gals 15% HCL Acid, 139,878 bbls Slick Water carrying 519,200# 100 mesh, 2,424,900# 40/70 sand and 1,430,700# 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>
<u>Surface:</u>		
Big Lime	2363'	2453'
Big Injun	2454'	2612'
Weir	2613'	2806'
Berea	2807'	2916'
Gantz	2917'	3032'
Gordon	3033'	3355'
Fifth Sandstone	3356'	3435'
Bayard	3436'	4131'
Balltown	4132'	4850'
Bradford	4851'	5273'
Benson	5274'	5538'
Alexander	5539'	5747'
Elk	5748'	6804'
Sycamore	6805'	6960'
Middlesex Shale	6961'	7089'
Burkett Shale	7090'	7123'
Tully	7124'	7191'
Hamilton	7192'	7196'
Marcellus	7197'	7223' TVD

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/29/2013
Job End Date:	4/6/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06094-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Ruckman 1H
Longitude:	-80.69536940
Latitude:	39.15216670
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	5,874,876
Total Base Non Water Volume:	

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	Water	Water	7732-18-5	100.00000	91.42532	
WV Specific 40/70 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	4.73349	
			Aluminum Oxide	1344-28-1	1.10000	0.05212	
			Titanium Oxide	13463-67-7	0.10000	0.00474	
			Iron Oxide	1309-37-1	0.10000	0.00474	
WV Specific 20/40 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	2.50944	
			Aluminum Oxide	1344-28-1	1.10000	0.02763	
			Iron Oxide	1309-37-1	0.10000	0.00251	
			Titanium Oxide	13463-67-7	0.10000	0.00251	
WV Specific 100 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	0.98387	
			Aluminum Oxide	1344-28-1	1.10000	0.01083	
			Iron Oxide	1309-37-1	0.10000	0.00099	



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WFR-3B	Nabors Completion and Production Services	Friction Reducer	Titanium Oxide	13463-67-7	0.10000	0.00099	
			Hydroreated light distillates, non-aromatic, BTEX free	64742-47-8	50.00000	0.03042	
			Ethoxylated alcohols	88551-12-2	15.00000	0.00913	
			Ethoxylated oleamine	26635-93-8	5.00000	0.00304	
LSG-100L	Nabors Completion and Production Services	Gelling Agents					
			Petroleum Distillates	64742-47-8	70.00000	0.03653	
HCl Acid (12.5%-18.0%)	Nabors Completion and Production Services	Bulk Acid					
			Hydrogen Chloride	7647-01-0	18.00000	0.03088	
OB-2	Nabors Completion and Production Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.01150	
			Silica, crystalline quartz	7631-86-9	10.00000	0.00115	
KR-153SL	Nabors Completion and Production Services	Biocides					
			Polyethylene-Glycol	25322-68-3	50.00000	0.00555	
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00222	
Super GREEN SOLV	Nabors Completion and Production Services	Paraffin & Scale Additives					
			BTEX Free Aliphatic Hydrocarbon	64742-96-7	100.00000	0.00618	
EB-4L	Nabors Completion and Production Services	Gel Breakers					
			Water	7732-18-5	100.00000	0.00044	
			Breaker Component	Proprietary	100.00000	0.00044	
			Demulsifier Base	Proprietary	100.00000	0.00044	
			Cellulase enzyme	Proprietary	100.00000	0.00044	
			Sugar	57-50-1	100.00000	0.00044	
			Ethylene Glycol	107-21-1	40.00000	0.00018	
Acid Inhibitor 2 (A1-2)	Nabors Completion and Production Services	Acid Corrosion Inhibitors					
			Propargyl Alcohol	107-19-7	40.00000	0.00013	
			Isopropyl Alcohol	67-63-0	40.00000	0.00013	
			Glycol Ethers	111-46-6	40.00000	0.00013	
			Ethoxylated Nonylphenol	68412-54-4	13.00000	0.00004	
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	10.00000	0.00003	

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.

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Other Ingredients	Nabors Completion and Production Services	Other Ingredients						
		Water	7732-18-5		87.50000	0.15013		
		guar gum	9000-30-0		50.00000	0.02610		
		Water	7732-18-5		40.00000	0.02433		
		Polyacrylamide	57-55-6		40.00000	0.02433		
		Water	7732-18-5		60.00000	0.00846		
		Propylene glycol	57-55-6		15.00000	0.00913		
		Water	7732-18-5		80.00000	0.00889		
		Proprietary	Proprietary		50.00000	0.00788		
		Water	7732-18-5		50.00000	0.00487		
		Proprietary	Proprietary		50.00000	0.00487		
		Proprietary	Proprietary		50.00000	0.00487		
		Proprietary	Proprietary		15.00000	0.00236		
		Proprietary	Proprietary		15.00000	0.00236		
		vinylidene chloride-methyl acrylate copolymer	25038-72-6		20.00000	0.00230		
		Surfactant	88439-51-0		2.00000	0.00104		
		Crystalline Silica (in the form of quartz)	14808-60-7		2.00000	0.00104		
		Microparticle	Proprietary		1.00000	0.00061		
		Water	7732-18-5		48.00000	0.00016		
		2-Butoxyethanol	111-76-2		13.00000	0.00004		
		Dioxane	123-91-1		1.00000	0.00000		
		Organophylic Clay	88953-58-2					

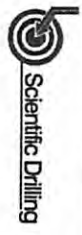
* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

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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Antero Resources
 Ruckman Unit 1H
 Doddridge County WV
 Northing: 14217487.35
 Easting: 1726777.12
 Original Wellpath



Genie Lightfoot
 14:16, September 06 2013
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

REFERENCE INFORMATION
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WELL DETAILS: Ruckman Unit 1H

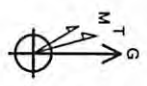
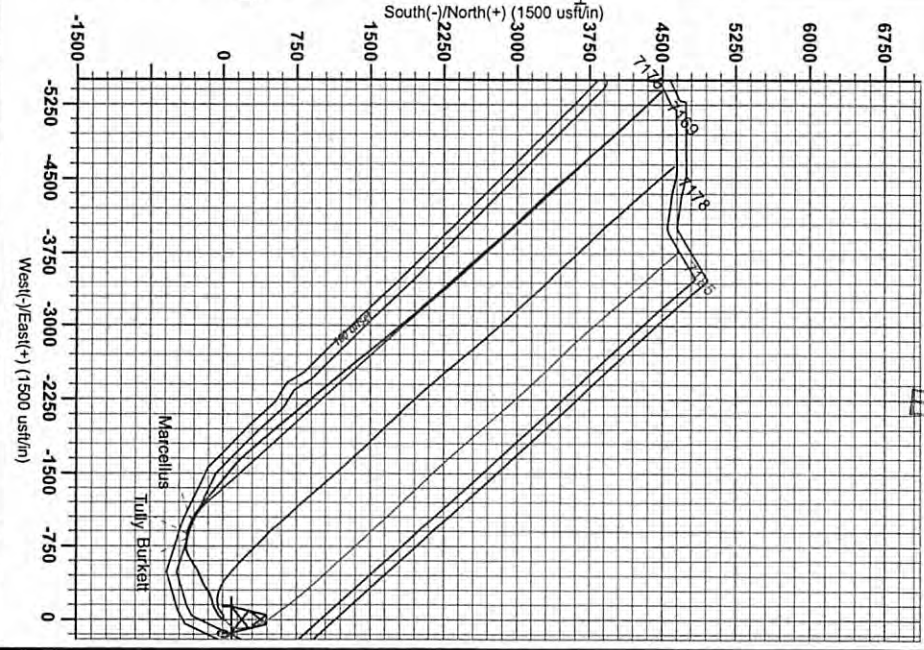
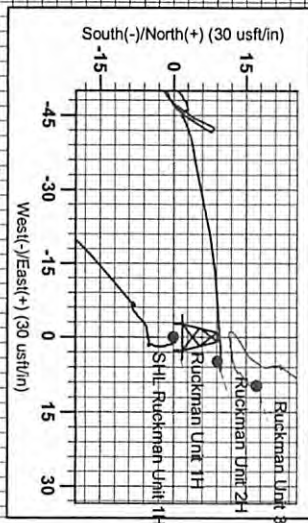
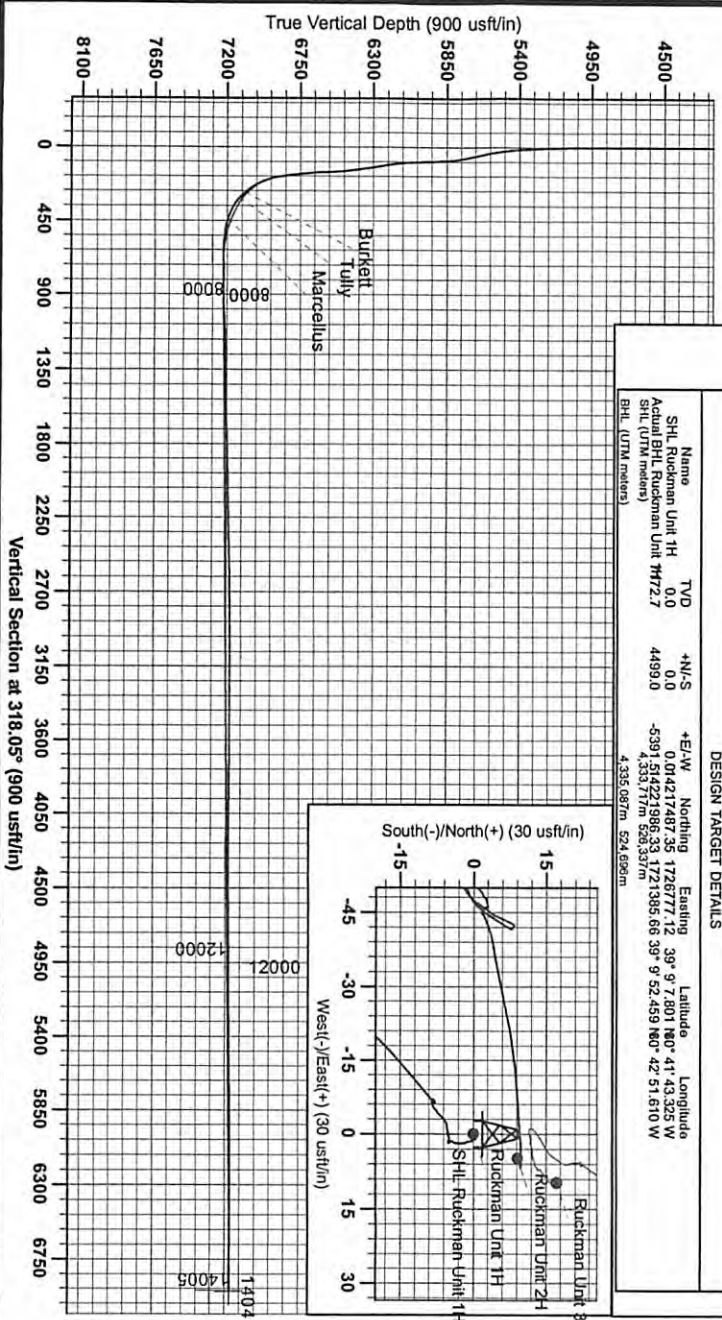
+N/S	+E/W	Ground Level	1250.0	Northing	14217487.35	Latitude	39° 9' 7.801 860' 41" 43.325 W	Longitude	98° 9' 7.801 860' 41" 43.325 W	Slut
0.0	0.0									

LEGEND

- ▲ Ruckman Unit 2H: Original Wellpath, Original Wellpath VO
- Ruckman Unit 1H: Original Wellpath, Plan 6 VO
- Ruckman Unit 3H: Original Wellpath, Original Wellpath VO
- Original Wellpath

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Ruckman Unit 1H	0.0	0.0	0.0	0.014217487 35	1726777.12	39° 9' 7.801 860' 41" 43.325 W	98° 9' 7.801 860' 41" 43.325 W
Actual BHL Ruckman Unit 1H	4499.0	-5391.514221986 33	-5391.514221986 33	1721385.66	39° 9' 52.459 860' 42" 51.610 W	4.333, 717m	629, 337m
BHL (UTM meters)				4,335.087m	624.696m		



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Azimuth to Grid North
 True North: -0.19°
 Magnetic North: -0.53°
 Strength: 52414.1nT
 Dip Angle: 66.66°
 Date: 10/23/2012
 Model: IGRF-2010

01/10/2014