

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: 8/12/2013  
API #: 47-033-05641

Farm name: Matheny, Norman C. Operator Well No.: Rogers Unit 2H

LOCATION: Elevation: 1,275' Quadrangle: West Milford

District: Union County: Harrison  
Latitude: 15.417' Feet South of 39 Deg. 15 Min. 00 Sec.  
Longitude 833' Feet West of 80 Deg. 22 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#	544'	544'	756 Cu. Ft. Class A
Inspector: <b>Sam Ward</b>	9 5/8" 36#	2,567'	2,567'	1045 Cu. Ft. Class A
Date Permit Issued: 8/16/2012	5 1/2" 20#	13,955'	13,955'	3410 Cu. Ft. Class H
Date Well Work Commenced: 9/20/2012				
Date Well Work Completed: 3/8/2013	2 3/8" 4.7#	7,387'		
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): 7,182' TVD (Deepest point drilled)				
Total Measured Depth (ft): 13,955' MD, TVD 7179' (BHL)				
Fresh Water Depth (ft.): 187'				
Salt Water Depth (ft.): 747', 908'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): <small>Pad constructed on reclaimed Pittsburgh coal bench</small>				
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) 7,023' (Top)

Gas: Initial open flow ----- MCF/d Oil: Initial open flow ---- B  
Final open flow 4,155 MCF/d Final open flow ---- Bbl/d  
Time of open flow between initial and final tests ---- Hours  
Static rock Pressure 3600 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.

Kathleen Buck  
Signature

12/10/2013  
Date

04/04/2014

33.05641

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 wireline logs on the first well on a multi-wall pad (Hawker Unit 1H API#47-033-05553). Please reference the wireline logs submitted with Form WR-35 for Hawker Unit 1H.

**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: 7,444' - 13,899' MD (1,368 holes)

Frac'd w/ 11,000 gals 15% HCL Acid, 139,080 bbls Slick Water carrying 652,158# 100 mesh, 2,642,750# 40/70 sand and 1,594,470# 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. 1458'		1573'
Big Injun	est. 1574'		1842'
Gantz	est. 1843'		1968'
Fifty Foot Sandstone	est. 1969'		2119'
Gordon	est. 2120'		2388'
Fifth Sandstone	est. 2389'		2445'
Bayard	est. 2446'		3089'
Speechley	est. 3090'		3301'
Balltown	est. 3302'		3798'
Bradford	est. 3799'		4398'
Benson	est. 4399'		4707'
Alexander	est. 4708'		4924'
Elk	est. 4925'		5618'
Rhinestreet	est. 5619'		6308'
Sycamore	6309'		6675'
West River Shale	6676'		6784'
Burkett	6785'		6807'
Tully	6808'		6932'
Hamilton	6933'		7022'
Marcellus	7023'		7182' TVD

04/04/2014

33-05641



**Antero Resources**  
**Rogers Unit 2H**  
**Harrison County West Virginia**  
**Northing: 14252483.05**  
**Easting: 1801957.77**  
**Original Wellpath**

WELL DETAILS: Rogers Unit 2H						
+N-S	+E-W	Northing	Ground Level:	1275.0	Latitude	Longitude
0.0	0.0	14252483.05	Easting	1801957.7739° 14' 50.234 N80° 25' 45.857 W	Slot	

PROJECT DETAILS: Harrison County West Virginia	
Geodesic System:	Universal Transverse Mercator (US Survey Feet)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	Zone 17N (84 W to 78 W)
System Datum:	Mean Sea Level

REFERENCE INFORMATION						
Co-ordinate (N/E) Reference:	Well Rogers Unit 2H, Grid North					
Vertical (TVD) Reference:	Rogers 2H 1275.0L + 28 KB @ 1303.0ust					
Section (VSI) Reference:	Slot - @ DN, 0.05					
Measured Depth Reference:	Rogers 2H 1275.0L + 28 KB @ 1303.0ust					
Calculation Method:	Minimum Curvature					

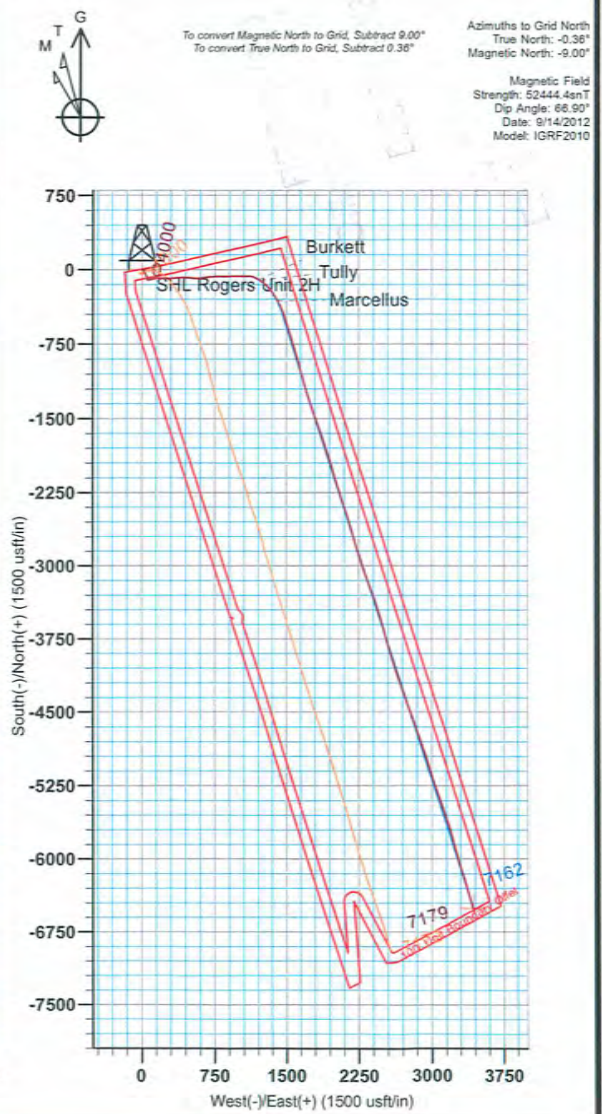
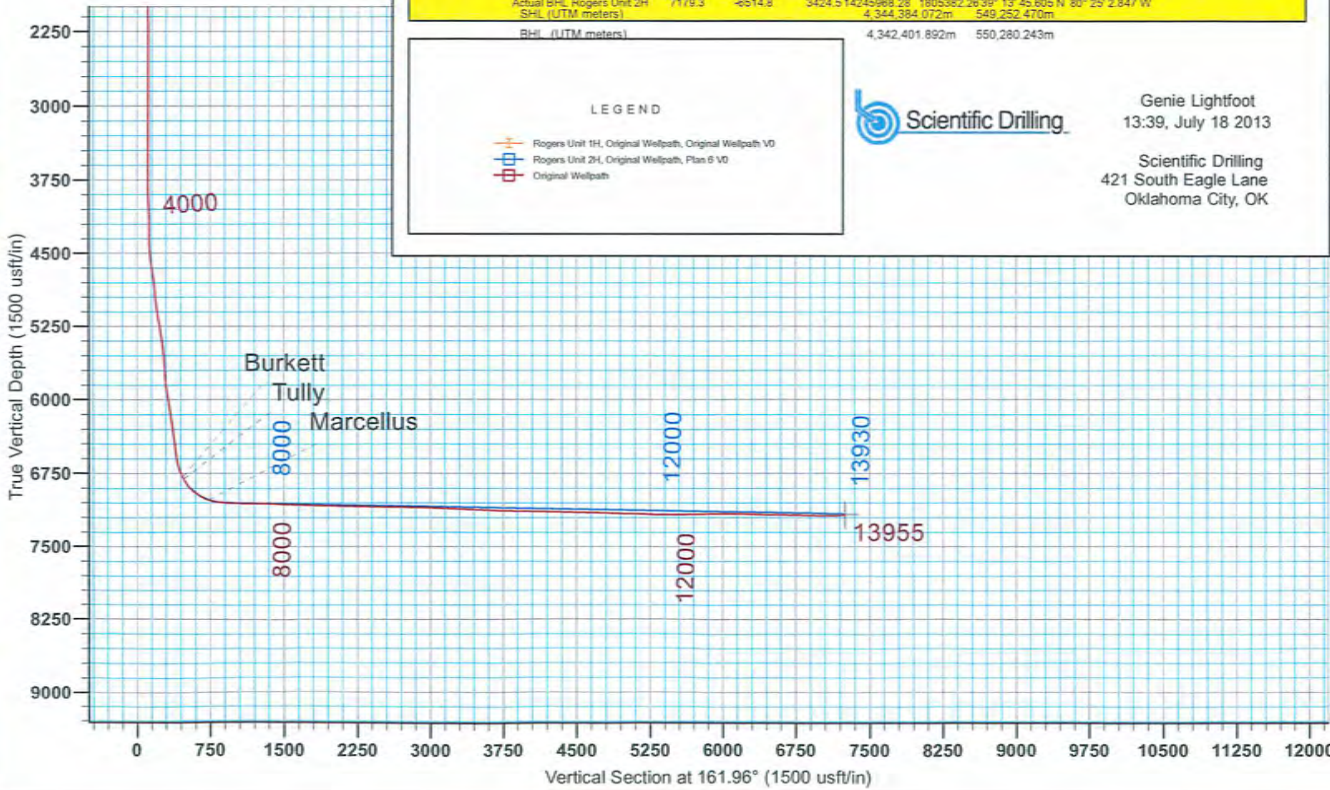
Well Location Coordinates (NAD 83)						
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude
SHL Rogers Unit 2H	0.0	0.0	0.0	14252483.05	1801957.7739° 14' 50.234 N80° 25' 45.857 W	
Actual BHL Rogers Unit 2H	7179.3	-6514.8	3424.5	14245968.28	1805382.2639° 13' 45.605 N 80° 25' 2.847 W	
SHL (UTM meters)				4,344,384.072m	549,252.470m	
BHL (UTM meters)				4,342,401.892m	550,280.243m	

**LEGEND**

- Rogers Unit 2H, Original Wellpath, Original Wellpath VD
- Rogers Unit 2H, Original Wellpath, Plan 6 VD
- Original Wellpath

**Scientific Drilling**  
 Genie Lightfoot  
 13:39, July 18 2013  
 Scientific Drilling  
 421 South Eagle Lane  
 Oklahoma City, OK



Azimuths to Grid North  
 True North: -0.36°  
 Magnetic North: -9.00°  
 Magnetic Field  
 Strength: 52444.4nT  
 Dip Angle: 66.90°  
 Date: 9/14/2012  
 Model: IGRF2010

33-05641

**Hydraulic Fracturing Fluid Product Component Information Disclosure**

Fracture Date:	2/28/2013
State:	WV
County:	Harrison
API Number:	47-033-05641
Operator Name:	Antero Resources
Well Name and Number:	Rogers Unit 2H
Longitude:	-80.4294056
Latitude:	39.2472861
Long/Lat Projection:	NAD27
Production Type:	Gas
True Vertical Depth (TVD):	7,179
Total Water Volume* (gal):	5,593,182

**Hydraulic Fracturing Fluid Composition:**

Trade Name	Supplier	Purpose	Compositional or Formulary Components Disclosed	Chemical Abstract Service Number (CAS #) - If applicable	Maximum Component Concentration in Additive (% by mass)**	Maximum Component Concentration in HF Fluid (% by mass)**	Comments
Freshwater	Antero Resources		Water	7732-18-5	100.00%	89.31866%	
Hydrochloric Acid 10-15%	Reagent	Acid	Hydrochloric Acid	7647-01-0	15.00%	0.03167%	
100 Mesh	US Silica	Proppant	Sand	14808-60-7	100.00%	1.39723%	
40/70 White	US Silica	Proppant	Sand	14808-60-7	100.00%	5.46433%	
20/40 White	US Silica	Proppant	Sand	14808-60-7	100.00%	3.59236%	
Sodium Persulfate	Chemplex	Breaker	Sodium Persulfate	7775-27-1	100.00%	0.00160%	
Ferriplex 66	Chemplex	Iron Control	Acetic Acid	64-19-7	50.00%	0.00021%	
			Citric Acid	77-92-9	30.00%	0.00012%	
			Water	7732-18-5	35.00%	0.00014%	
Plexbreak 145	Chemplex	Non-emulsifier	Cocamide Diethanolamine Salt	68603-42-9	10.00%	0.00007%	
			Diethanolamine	111-42-2	5.00%	0.00003%	
			Ethylene Glycol Monobutyl Ether	111-76-2	15.00%	0.00010%	
			Methyl Alcohol	67-56-1	15.00%	0.00010%	
			Water	732-18-5	66.00%	0.00046%	
Plexhib 256	Chemplex	Corrosion Inhibitor	Alcohol Ethoxylate Surfactants	Trade Secret	30.00%	0.00019%	
			Methyl Alcohol	67-56-1	70.00%	0.00044%	
			n-olefins	Trade Secret	10.00%	0.00006%	
			Propargyl Alcohol	107-19-7	8.00%	0.00005%	
			thiourea-formaldehyde copolymer	68527-49-1	30.00%	0.00019%	
Plexald 673	Chemplex	Scale Inhibitor	Methyl Alcohol	67-56-1	25.00%	0.00404%	
			Sodium Salt of Phosphonodimethylated Diamine	Trade Secret	5.00%	0.00081%	
			Water	7732-18-5	85.00%	0.01374%	
Plexcide 15G	Chemplex	Biocide	Water	7732-18-5	90.00%	0.02524%	
			Glutaraldehyde	111-30-8	14.00%	0.00393%	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	3.00%	0.00084%	
			Alkyl Dimethyl Benzyl Ammonium Chloride	68424-85-1	3.00%	0.00084%	
			Ethanol	64-17-5	3.00%	0.00084%	
Beta M-4.0	PIP	Guar Gel	Guar Gum	9000-30-0	50.00%	0.06224%	
			Petroleum Distillate	64742-47-8	55.00%	0.06847%	
			Clay	1302-78-9	5.00%	0.00622%	
			Surfactant	154518-36-2	1.00%	0.00124%	
Plexlick 953	Chemplex	Friction Reducer	Alcohol Ethoxylate Surfactants	Trade Secret	8.00%	0.00492%	
			Hydrotreated Petroleum Distillate	64742-47-8	36.00%	0.01847%	
			Polyacrylamide-co-acrylic acid	6/9/9003	32.00%	0.01970%	
			Water	7732-18-5	35.00%	0.02155%	

\*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%

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)