

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: 9/1/2013  
API #: 47-017-06158

Farm name: Matschelknaus, Clarence Operator Well No.: Walter Unit 1H

LOCATION: Elevation: 1050' Quadrangle: Big Isaac

District: Greenbrier County: Doddridge  
Latitude: 7.540' Feet South of 39 Deg. 15 Min. 00 Sec.  
Longitude 1.845' 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" 51#	40'	40'	38 Cu. Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	356'	356'	495 Cu. Ft. Class A
Inspector: <b>Douglas Newlon</b>	9 5/8" 36#	2,583'	2,583'	1052 Cu. Ft. Class A
Date Permit Issued: 1/7/2013	5 1/2" 20#	14,938'	14,938'	3675 Cu. Ft. Class H
Date Well Work Commenced: 2/7/2013				
Date Well Work Completed: 8/19/2013	2 3/8" 4.7#	7,305'		
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): 7166' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 14,940' MD, 7065' TVD (BHL)				
Fresh Water Depth (ft.): 135'				
Salt Water Depth (ft.): 1,489'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 740', 820' 1,760'				
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) 7141' (TOP)

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

Final open flow 12,725 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.

Kaitlin Buck  
Signature

12/10/2013  
Date

04/04/2014

17-06158

Were core samples taken? Yes \_\_\_\_\_ No X

Were cuttings caught during drilling? Yes \_\_\_\_\_ No X

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 (Ruth Unit 1H API#47-017-06164). Please reference the wire-line logs submitted with Form WR-35 for Ruth 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: 7,554'- 14,882' (3528 Holes)

Frac'd w/ 28,000 gals 15% HCL Acid, 201,392 bbls Slick Water carrying 451,456# 100 mesh, 3,949,330# 40/70 sand and 1,891,590# 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	est. 1,990'	2,104'
Big Injun	est. 2,105'	2,454'
Gantz Sand	est. 2,455'	2,573'
Fifty Foot Sandstone	est. 2,574'	2,662'
Gordon	est. 2,663'	2,831'
Fifth Sandstone	est. 2,832'	2,875'
Bayard	est. 2,876'	3,553'
Speechley	est. 3,554'	3,879'
Balltown	est. 3,880'	4,380'
Bradford	est. 4,381'	4,966'
Benson	est. 4,967'	5,279'
Alexander	est. 5,280'	5,435'
Elk	est. 5,436'	6,065'
Rhinestreet	est. 6,066'	6,600'
Sycamore	6,601'	6,812'
Middlesex	6,813'	6,965'
Burkett	6,966'	6,991'
Tully	6,992'	7,091'
Hamilton	7,092'	7,140'
Marcellus	7,141'	7,166' TVD

04/04/2014

17-06158

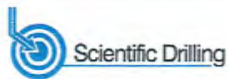


**Antero Resources**  
**Walter Unit 1H**  
**Doddridge County WV**  
**Northing: 14251321.01**  
**Easting: 1762664.58**  
**As Drilled**

WELL DETAILS: Walter Unit 1H						
Ground Level:	1050.0					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	14251321.01	1762664.58	39° 14' 40.895 N	80° 34' 5.561 W	

REFERENCE INFORMATION	
Co-ordinate (NE) Reference:	Well Walter Unit 1H, Grid North
Vertical (TVD) Reference:	Walter Unit 1H 1050' GL + 25' RKB @ 1075.0usft (Original Well Elev)
Section (VS) Reference:	Slot - (0.0N, 0.0E)
Measured Depth Reference:	Walter Unit 1H 1050' GL + 25' RKB @ 1075.0usft (Original Well Elev)
Calculation Method:	Minimum Curvature

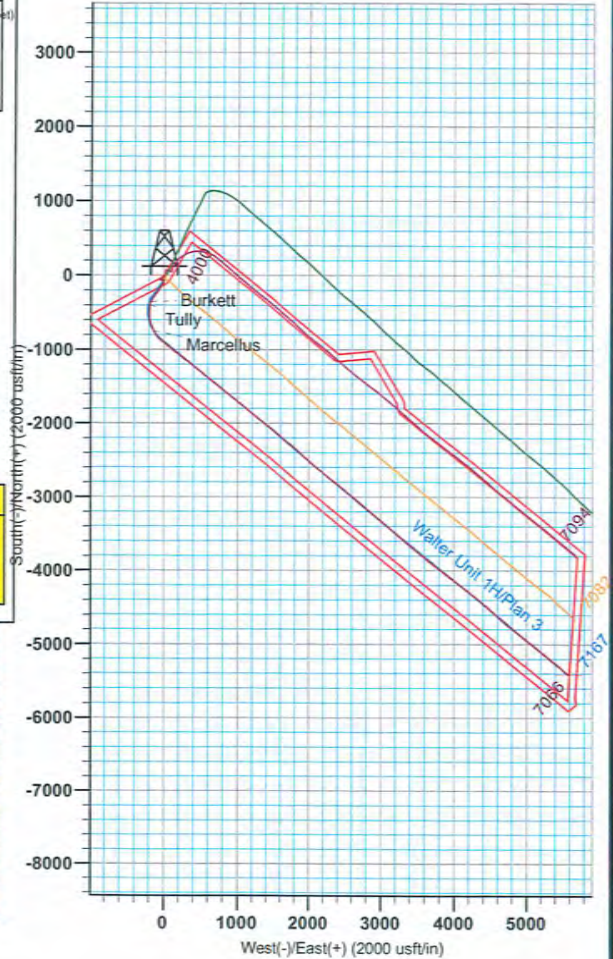
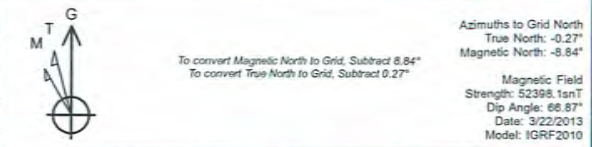
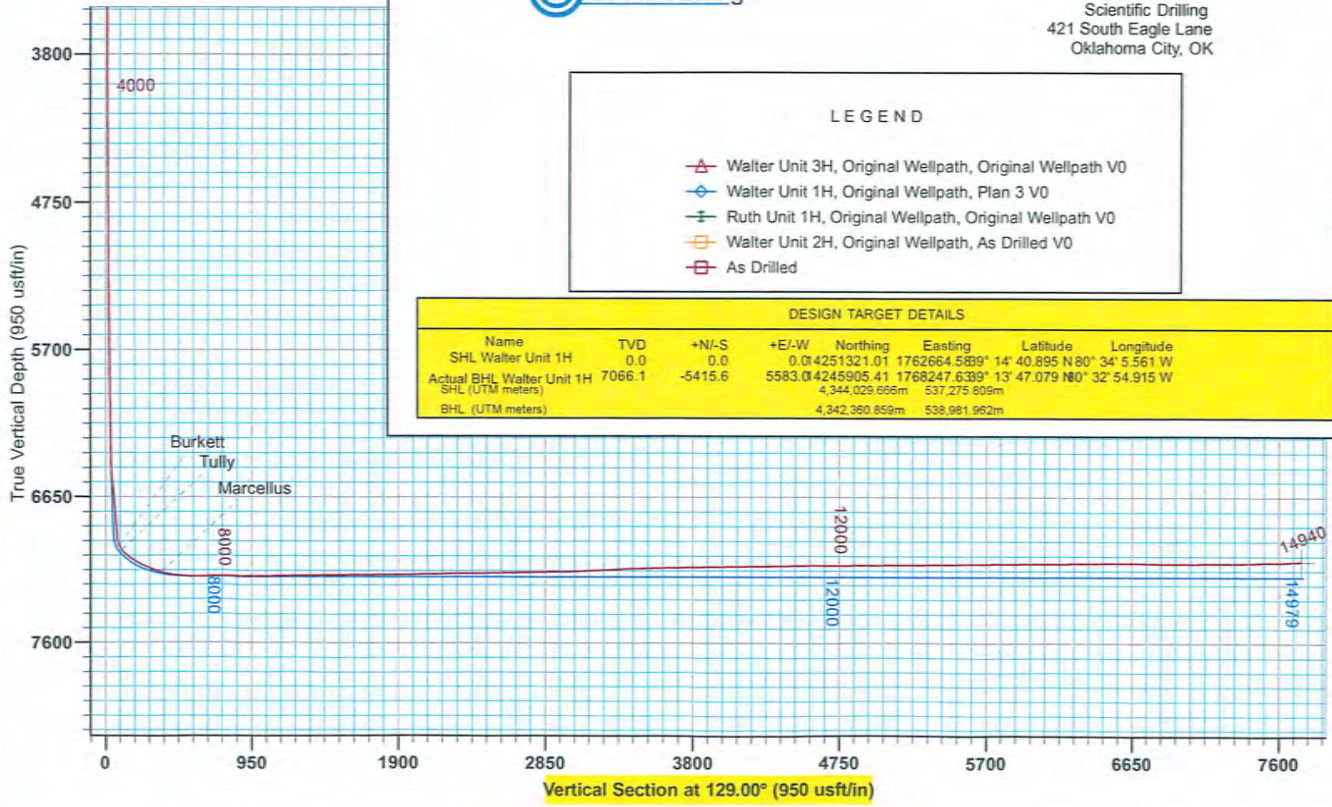
PROJECT DETAILS: Doddridge County WV	
Geodetic System:	Universal Transverse Mercator (US Survey Feet)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	Zone 17N (84 W to 78 W)
System Datum:	Mean Sea Level



Genie Lightfoot  
 9:47, October 01 2013  
 Scientific Drilling  
 421 South Eagle Lane  
 Oklahoma City, OK

LEGEND	
	Walter Unit 3H, Original Wellpath, Original Wellpath V0
	Walter Unit 1H, Original Wellpath, Plan 3 V0
	Ruth Unit 1H, Original Wellpath, Original Wellpath V0
	Walter Unit 2H, Original Wellpath, As Drilled V0
	As Drilled

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Walter Unit 1H	0.0	0.0	0.0	4251321.01	1762664.58	39° 14' 40.895 N	80° 34' 5.561 W
Actual BHL Walter Unit 1H	7066.1	-5415.6	5583.0	4245905.41	1768247.63	39° 13' 47.079 N	80° 32' 54.915 W
SHL (UTM meters)				4,344,029.665m	537,275.809m		
BHL (UTM meters)				4,342,360.859m	538,981.982m		



# Hydraulic Fracturing Fluid Product Component Information Disclosure

17-06/58

Job Start Date:	8/9/2013
Job End Date:	8/19/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06158-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Walter Unit 1H
Longitude:	-80.56821110
Latitude:	39.24469170
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,167
Total Base Water Volume (gal):	8,458,464
Total Base Non Water Volume:	321,257



## 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	91.50471	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	8.16208	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.12175	
			Hydrogen Chloride	7641-01-1	18.00000	0.02908	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			Water	7732-18-5	40.00000	0.02950	
			Anionic Polyacrylamide	Proprietary	40.00000	0.02950	
			Petroleum Distillates	64742-47-8	40.00000	0.02375	
			Crystalline Salt	12125-02-9	5.00000	0.00369	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00369	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.03261	
			Petroleum Distillates	64742-47-8	60.00000	0.03089	
			Suspending agent (solid)	14808-60-7	3.00000	0.00499	

17.06/58

			Surfactant	68439-51-0	3.00000	0.00196
SI-1000	U.S. Well Services, LLC	Scale Inhibitor				
			Anionic Copolymer	Proprietary		0.00454
			Ethylene Glycol	107-21-1	20.00000	0.00411
			Water	7732-18-5	30.00000	0.00342
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00536
			Deionized Water	7732-18-5	28.00000	0.00306
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitor				
			Ethylene Glycol	107-21-1	40.00000	0.00032
			N,N-Dimethylformamide	68-12-2	20.00000	0.00010
			Cinnamaldehyde	104-55-2	15.00000	0.00009
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00009
			2-Butoxyethanol	111-76-2	15.00000	0.00008
			Poly(oxy-1,2-ethanediyl), alpha-(4-nolylphenyl)-omega-hydroxy, branched	127087-87-0	5.00000	0.00003
			1-Decanol	112-30-1	5.00000	0.00002
			Isopropyl Alcohol	67-63-0	2.50000	0.00001
			1-Octanol	111-87-5	3.00000	0.00001
AP One	U.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00056

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)