

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 #: 47-017-06143

Farm name: Mutschelknaus, Clarence Operator Well No.: Walter Unit 3H

LOCATION: Elevation: 1050' Quadrangle: Big Isaac

District: Greenbrier County: Doddridge
Latitude: 7.523' Feet South of 39 Deg. 15 Min. 00 Sec.
Longitude 1.834' 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#	587'	587'	815 Cu. Ft. Class A
Inspector: Douglas Newlon	9 5/8" 36#	2,539'	2,539'	1034 Cu. Ft. Class A
Date Permit Issued: 12/4/2012	5 1/2" 20#	13,945'	13,945'	3415 Cu. Ft. Class H
Date Well Work Commenced: 2/7/2013				
Date Well Work Completed: 7/26/2013	2 3/8" 4.7#	7,336'		
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): 7,155' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 14,250' MD, 7094' 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) 7,135' (TOP)

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

Final open flow 10,911 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.

Kaiten Buck
Signature

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

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: 7,488'-13,892' (3,096 Holes)

Frac'd w/ 22,500 gals 15% HCL Acid, 188,605 bbls Slick Water carrying 503,270# 100 mesh, 3,691,235# 40/70 sand and 1,634,500# 20/40 sand.

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

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			
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'		6,596'
Sycamore	6,597'		6,813'
Middlesex	6,814'		6,958'
Burkett	6,959'		6,985'
Tully	6,986'		7,082'
Hamilton	7,083'		7,134'
Marcellus	7,135'		7,155' TVD

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Antero Resources
Walter Unit 3H
Doddridge County WV
Northing: 14251331.86
Easting: 1762681.38
Original Wellpath

WELL DETAILS: Walter Unit 3H						
+N/-S	+E/-W	Northing	Easting	Ground Level: 1050.0	Latitude	Longitude
0.0	0.0	14251331.86	1762681.38	29° 14' 41.001 N	80° 34' 5.347 W	Slot

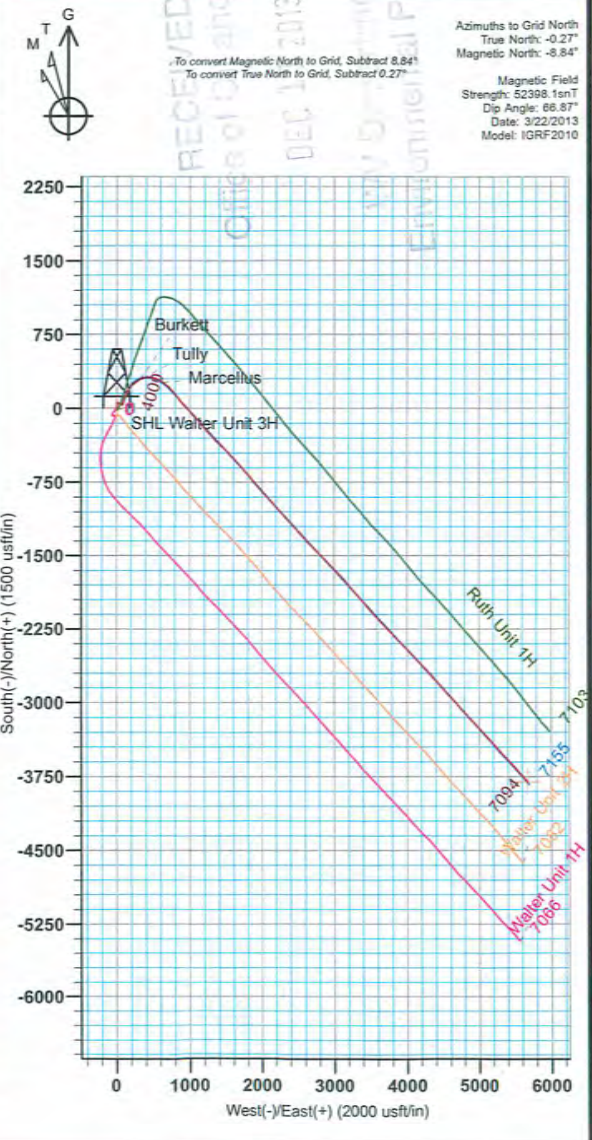
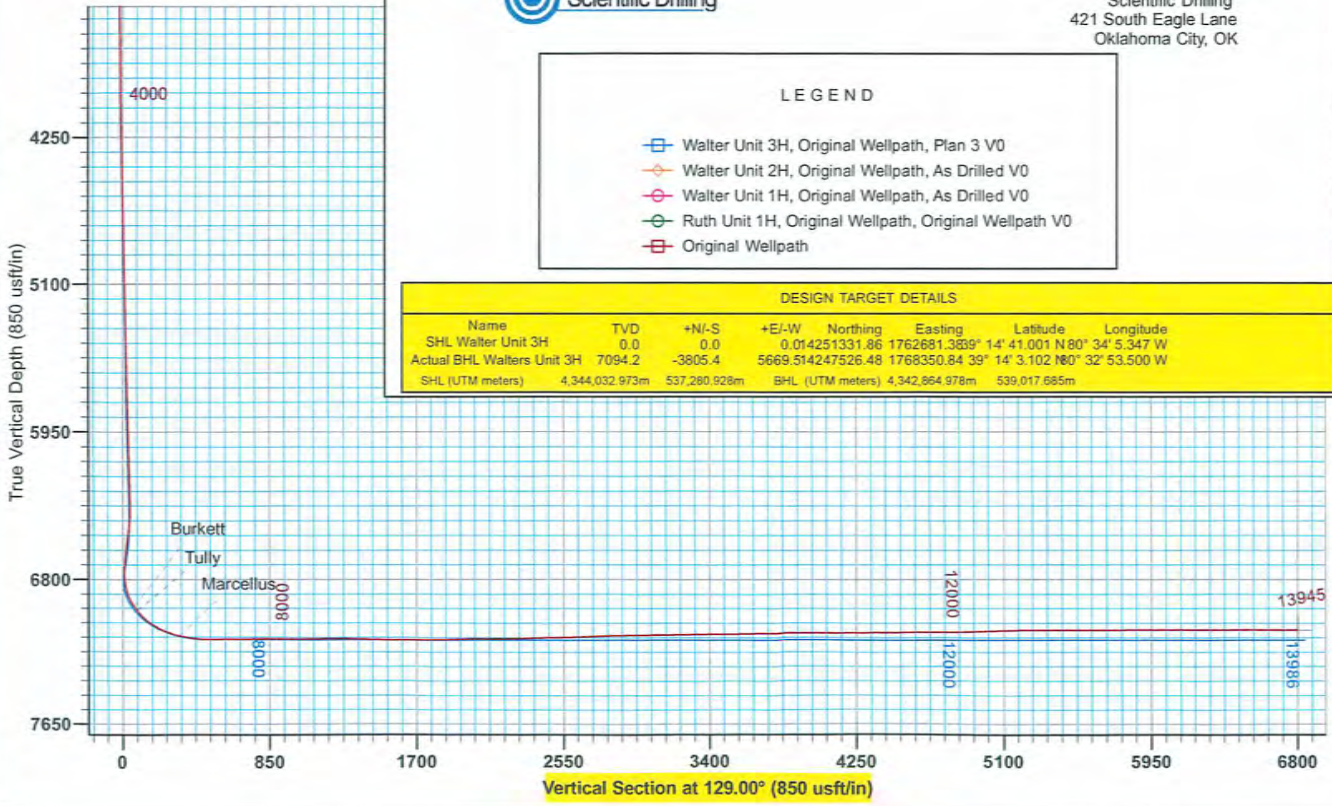
REFERENCE INFORMATION	PROJECT DETAILS: Doddridge County WV
Co-ordinate (N/E) Reference: Well Walter Unit 3H, Grid North Vertical (TVD) Reference: Walter Unit 3H 1050' GL + 25' RKB @ 1075.0usft (Original Well Elev) Section (VS) Reference: Slot - (0.0N, 0.0E) Measured Depth Reference: Walter Unit 3H 1050' GL + 25' RKB @ 1075.0usft (Original Well Elev) Calculation Method: Minimum Curvature	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
 10:21, October 01 2013
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

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

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Walter Unit 3H	0.0	0.0	0.014251331.86	1762681.3839°	14° 41' 001 N	80° 34' 5.347 W	
Actual BHL Walters Unit 3H	7094.2	-3805.4	5669.514247526.48	1768350.84	39° 14' 3.102 N	80° 32' 53.500 W	
SHL (UTM meters)	4,344,032.973m	537,280.928m	BHL (UTM meters)	4,342,864.978m	539,017.685m		



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Azimuths to Grid North
 True North: -0.27°
 Magnetic North: -8.84°
 Magnetic Field
 Strength: 52388.1enT
 Dip Angle: 66.87°
 Date: 3/22/2013
 Model: IGRF2010

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/27/2013
Job End Date:	8/9/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06162-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Walter Unit 2H
Longitude:	-80.56818060
Latitude:	39.24470830
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,170
Total Base Water Volume (gal):	8,024,016
Total Base Non Water Volume:	303,131



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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	91.53897	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	8.13539	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.11468	
			Hydrogen Chloride	7641-01-1	18.00000	0.02739	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			Water	7732-18-5	40.00000	0.03124	
			Anionic Polyacrylamide	Proprietary	40.00000	0.03124	
			Petroleum Distillates	64742-47-8	40.00000	0.02515	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00391	
			Crystalline Salt	12125-02-9	5.00000	0.00391	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.03069	
			Petroleum Distillates	64742-47-8	60.00000	0.02907	
			Suspending agent (solid)	14808-60-7	3.00000	0.00469	

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			Surfactant	68439-51-0	3.00000	0.00184
SI-1000	U.S. Well Services, LLC	Scale Inhibitor				
			Anionic Copolymer	Proprietary		0.00478
			Ethylene Glycol	107-21-1	20.00000	0.00432
			Water	7732-18-5	30.00000	0.00361
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00493
			Deionized Water	7732-18-5	28.00000	0.00281
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitor				
			Ethylene Glycol	107-21-1	40.00000	0.00030
			N,N-Dimethylformamide	68-12-2	20.00000	0.00009
			Cinnamaldehyde	104-55-2	15.00000	0.00008
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00008
			2-Butoxyethanol	111-76-2	15.00000	0.00007
			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	0.00068

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)

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/16/2013
Job End Date:	8/9/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06143-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Walter Unit 3H
Longitude:	-80.56815280
Latitude:	39.24472220
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,155
Total Base Water Volume (gal):	7,795,410
Total Base Non Water Volume:	295,021



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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	91.51421	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	8.16569	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.11288	
			Hydrogen Chloride	7641-01-1	18.00000	0.02696	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	40.00000	0.02927	
			Anionic Polyacrylamide	Proprietary	40.00000	0.02927	
			Petroleum Distillates	64742-47-8	40.00000	0.02357	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00366	
			Crystalline Salt	12125-02-9	5.00000	0.00366	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.03080	
			Petroleum Distillates	64742-47-8	60.00000	0.02917	
			Suspending agent (solid)	14808-60-7	3.00000	0.00471	

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			Surfactant	68439-51-0	3.00000	0.00185
SI-1000	U.S. Well Services, LLC	Scale Inhibitor				
			Anionic Copolymer	Proprietary		0.00509
			Ethylene Glycol	107-21-1	20.00000	0.00460
			Water	7732-18-5	30.00000	0.00384
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00603
			Deionized Water	7732-18-5	28.00000	0.00344
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitor				
			Ethylene Glycol	107-21-1	40.00000	0.00030
			N,N-Dimethylformamide	68-12-2	20.00000	0.00009
			Cinnamaldehyde	104-55-2	15.00000	0.00008
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00008
			2-Butoxyethanol	111-76-2	15.00000	0.00007
			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
			1-Octanol	111-87-5	3.00000	0.00001
			Isopropyl Alcohol	67-63-0	2.50000	0.00001
AP One	U.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00061

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