

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: 8/28/2013
API #: 47-033-05622

Farm name: Myer, Everette M. Jr. Operator Well No.: Thaddeus Unit 2H

LOCATION: Elevation: 1358' Quadrangle: Big Isaac

District: Union County: Harrison
Latitude: 3.445° Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 6.952° Feet West of 80 Deg. 30 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#	55'	55'	52 Cu Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	375'	375'	520 Cu Ft. Class A
Inspector: Sam Ward	9 5/8" 36#	2,580'	2,580'	1050 Cu Ft. Class A
Date Permit Issued: 7/17/2012	5 1/2" 20#	12,382'	12,382'	2973 Cu Ft. Class H
Date Well Work Commenced: 9/30/2012				
Date Well Work Completed: 5/17/2013	2 3/8" 4.7#	7455'		
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): 7333' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 12,382' MD, 7292' TVD (BHL)				
Fresh Water Depth (ft.): 70'				
Salt Water Depth (ft.): 500'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 263', 490', 554', 1329'				
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) 7293' (Top)

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

Final open flow 7,966 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

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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.

Kaitlin Buck
Signature

12/6/13
Date

04/04/2014

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/ Gamma Ray,
Photo Density/Compensated Neutron/ Gamma Ray, Dual Laterolog/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:

Perforations: 7,587'-12,327' MD (1,008 Holes)

Frac'd w/ 7,500 gals 15% HCL Acid, 101,996 bbls Slick Water carrying 429,700# 100 mesh, 2,024,100# 40/70 sand and 958,800# 20/40 sand.

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

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			
Big Lime	1960'		2065'
Big Injun	2066'		2314'
Gantz Sand	2315'		2429'
Fifty Foot Sandstone	2430'		2522'
Gordon	2523'		2831'
Fifth Sandstone	2832'		2871'
Bayard	2872'		3530'
Speechley	3531'		3775'
Balltown	3775'		4290'
Bradford	4290'		4842'
Benson	4843'		5041'
Alexander	5042'		5190'
Elk	5191'		5851'
Rhinestreet	5852'		6627'
Sycamore	6628'		6897'
Middlesex	6898'		7068'
Burkett	7069'		7094'
Tully	7095'		7225'
Hamilton	7226'		7293'
Marcellus	7293'		7333' TVD

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Antero Resources
Thaddeus Unit 2H
Harrison County West Virginia
Northing: 14231176.62
Easting: 1778722.04
Original Wellpath

WELL DETAILS: Thaddeus Unit 2H						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	14231176.62	1778722.0439° 11'	20.911 N80° 30'	42.769 W	Slot

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SHL Thaddeus Unit 2H	0.0	0.0	0.0	14231176.62	1778722.0439° 11'	20.911 N80° 30'	42.769 W	Point
Actual BHL Thaddeus Unit 2H	7323.0	-4867.5	2090.8	14226309.12	1780812.8439° 10'	32.672 N80° 30'	16.544 W	Point
PBHL Thaddeus Unit 2H	7328.0	-4867.5	2090.8	14226309.12	1780812.8439° 10'	32.672 N80° 30'	16.543 W	Point

REFERENCE INFORMATION
 Coordinate (N/E) Reference: Well Thaddeus Unit 2H, Grid North
 Vertical (TVD) Reference: Thaddeus Unit 2H 1356' GL + 28' RKB @ 1385.0usft (Original Well Elev)
 Section (NS) Reference: Slot - (S) IN, (0.0E)
 Measured Depth Reference: Thaddeus Unit 2H 1356' GL + 28' RKB @ 1385.0usft (Original Well Elev)
 Calculation Method: Minimum Curvature

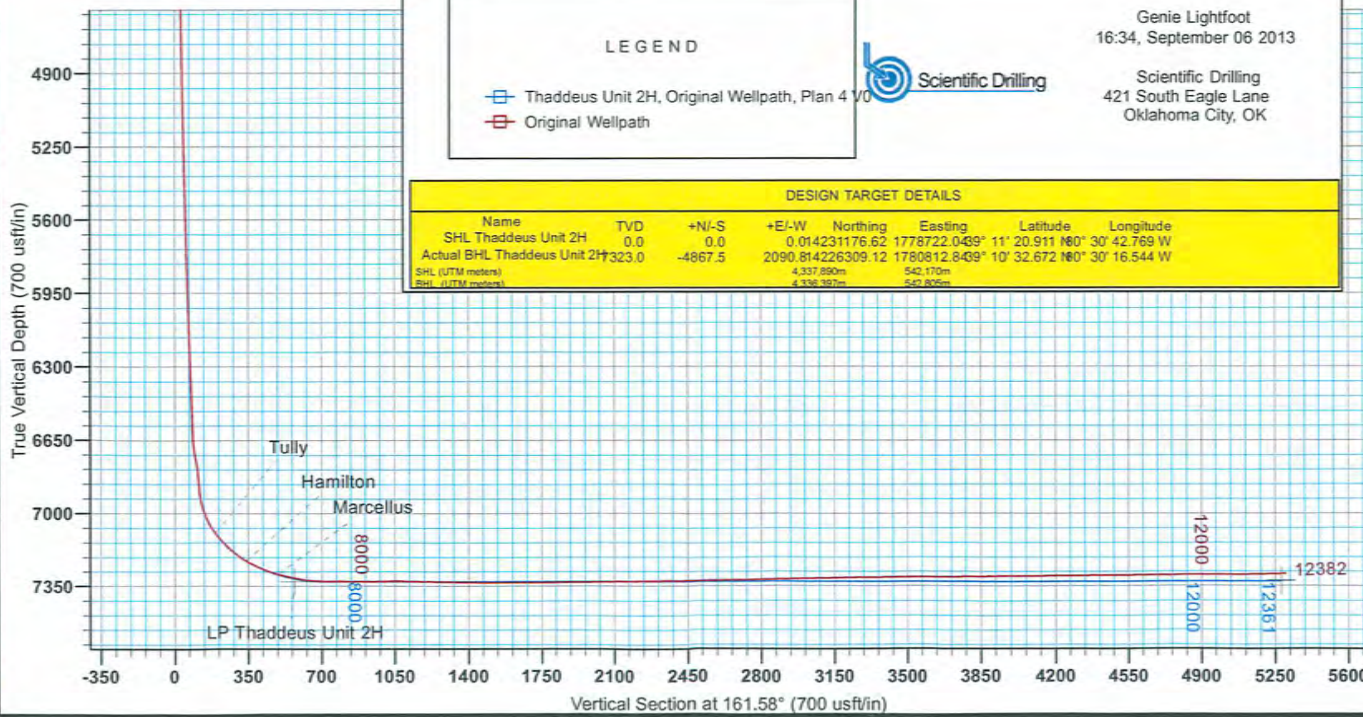
PROJECT DETAILS: Harrison County West Virginia
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

LEGEND

 Thaddeus Unit 2H, Original Wellpath, Plan 4 V
 Original Wellpath

Scientific Drilling
 Genie Lightfoot
 16:34, September 06 2013
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

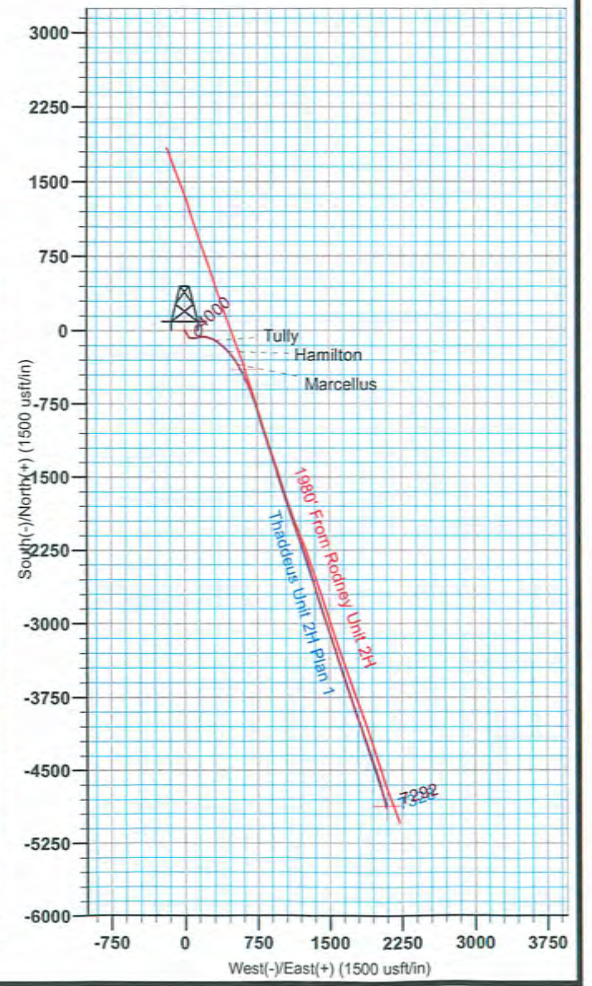
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
SHL Thaddeus Unit 2H	0.0	0.0	0.0	14231176.62	1778722.0439° 11'	20.911 N80° 30'	42.769 W	
Actual BHL Thaddeus Unit 2H	7323.0	-4867.5	2090.8	14226309.12	1780812.8439° 10'	32.672 N80° 30'	16.544 W	
SHL (UTM meters)				4,337,890m	542,170m			
BHL (UTM meters)				4,336,397m	542,805m			



North
 True North: -0.31°
 Magnetic North: -8.88°

To convert Magnetic North to Grid, Subtract 8.88°
 To convert True North to Grid, Subtract 0.31°

Magnetic Field
 Strength: 52418.0nT
 Dip Angle: 66.86°
 Date: 10/1/2012
 Model: IGRF2010



33.05623

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/18/2013
Job End Date:	5/23/2013
State:	West Virginia
County:	Harrison
API Number:	47-033-05623-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Thaddeus Unit 1H
Longitude:	-80.51184440
Latitude:	39.18913610
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,281
Total Base Water Volume (gal):	5,089,728
Total Base Non Water Volume:	



OFFICE OF OIL AND GAS
 REGULATORY DIVISION
 WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
 REGISTRATION NO. 082013

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	91.24647	
WV Specific 40/70 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	4.75400	
			Aluminum Oxide	1344-28-1	1.10000	0.05235	
			Iron Oxide	1309-37-1	0.10000	0.00476	
			Titanium Oxide	13463-67-7	0.10000	0.00476	
WV Specific 20/40 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia					
			Crystalline Silica, quartz	14808-60-7	99.90000	2.50864	
			Aluminum Oxide	1344-28-1	1.10000	0.02762	
			Titanium Oxide	13463-67-7	0.10000	0.00251	
			Iron Oxide	1309-37-1	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	1.10550	
			Aluminum Oxide	1344-28-1	1.10000	0.01217	

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			Iron Oxide	1309-37-1	0.10000	0.00111	
			Titanium Oxide	13463-67-7	0.10000	0.00111	
WFR-3B	Nabors Completion and Production Services	Friction Reducer					
			Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8	50.00000	0.02942	
			Ethoxylated alcohols	68551-12-2	15.00000	0.00883	
			Ethoxylated oleylamine	26635-93-8	5.00000	0.00294	
HCl Acid (12.5%-18.0%)	Nabors Completion and Production Services	Bulk Acid					
			Hydrogen Chloride	7647-01-0	18.00000	0.04032	
LSG-100L	Nabors Completion and Production Services	Gelling Agents					
			Petroleum Distillates	64742-47-8	70.00000	0.03379	
Super GREEN SOLV	Nabors Completion and Production Services	Paraffin & Scale Additives					
			BTEX Free Aliphatic Hydrocarbon	64742-96-7	100.00000	0.00966	
OB-2	Nabors Completion and Production Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00741	
			Sillica, crystalline quartz	7631-86-9	10.00000	0.00074	
KR-153SL	Nabors Completion and Production Services	Biocides					
			Polyethylene-Glycol	25322-68-3	50.00000	0.00542	
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00217	
EB-4L	Nabors Completion and Production Services	Gel Breakers					
			Water	7732-18-5	100.00000	0.00059	
			Breaker Component	Proprietary	100.00000	0.00059	
			Cellulase enzyme	Proprietary	100.00000	0.00059	
			Demulsifier Base	Proprietary	100.00000	0.00059	
			Sugar	57-50-1	100.00000	0.00059	
			Ethylene Glycol	107-21-1	40.00000	0.00024	
Acid Inhibitor 2 (AI-2)	Nabors Completion and Production Services	Acid Corrosion Inhibitors					
			Glycol Ethers	111-46-6	40.00000	0.00016	
			Propargyl Alcohol	107-19-7	40.00000	0.00016	
			Isopropyl Alcohol	67-63-0	40.00000	0.00016	
			Ethoxylated Nonylphenol	68412-54-4	13.00000	0.00005	
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	10.00000	0.00004	

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	0.19600		
		guar gum	9000-30-0	50.00000	0.02413		
		Polyacrylamide	67-55-6	40.00000	0.02354		
		Water	7732-18-5	40.00000	0.02354		
		Water	7732-18-5	60.00000	0.01020		
		Propylene glycol	67-55-6	15.00000	0.00883		
		Water	7732-18-5	80.00000	0.00868		
		Proprietary	Proprietary	50.00000	0.00850		
		Proprietary	Proprietary	15.00000	0.00255		
		Proprietary	Proprietary	15.00000	0.00255		
		Proprietary	Proprietary	15.00000	0.00255		
		vinylidene chloride-methyl acrylate copolymer	25038-72-6	20.00000	0.00148		
		Surfactant	68439-51-0	2.00000	0.00097		
		Crystalline Silica (in the form of quartz)	14808-60-7	2.00000	0.00097		
		Microparticle	Proprietary	1.00000	0.00059		
		Water	7732-18-5	48.00000	0.00019		
		2-Butoxyethanol	111-76-2	13.00000	0.00005		
		Dioxane	123-91-1	1.00000	0.00000		
		Organophylic Clay	68953-58-2				

* 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)