

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: 7/25/2013
API #: 47-033-05609

Farm name: Mountain Lakes Limited Operator Well No.: Lewis Unit 2H

LOCATION: Elevation: 1386' Quadrangle: West Milford

District: Union County: Harrison
Latitude: 3,191' Feet South of 39 Deg. 15 Min. 00 Sec.
Longitude 9,634' Feet West of 80 Deg. 27 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#	44'	44'	42 Cu Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	545'	545'	757 Cu Ft. Class A
Inspector: Sam Ward	9 5/8" 36#	2,625'	2,625'	1,069 Cu Ft. Class A
Date Permit Issued: 5/29/2012	5 1/2" 20#	12,062'	12,062'	2,875 Cu Ft. Class H
Date Well Work Commenced: 12/22/2012				
Date Well Work Completed: 4/22/2013	2 3/8" 4.7#	7296'		
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): 7189' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 12,062' MD, 7148' TVD (BHL)				
Fresh Water Depth (ft.): 280'				
Salt Water Depth (ft.): None Available				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 191', 274', 306'				
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) 7148 (TOP)

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

Final open flow 7445 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

RECEIVED
Office of Oil and Gas

DEC 05 2013

WV Department of
Environmental Protection

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 Bug
Signature

12/4/2013
Date

01/17/2014

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/20/2013
Job End Date:	4/25/2013
State:	West Virginia
County:	Harrison
API Number:	47-033-05609-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Lewis Unit 2H
Longitude:	-80.48960000
Latitude:	39.22354720
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	4,133,556
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	90.28316	
WV Specific 40/70 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	5.33981	
			Aluminum Oxide	1344-28-1	1.10000	0.05880	
			Titanium Oxide	13463-67-7	0.10000	0.00535	
			Iron Oxide	1309-37-1	0.10000	0.00535	
WV Specific 20/40 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	2.80490	
			Aluminum Oxide	1344-28-1	1.10000	0.03089	
			Titanium Oxide	13463-67-7	0.10000	0.00281	
			Iron Oxide	1309-37-1	0.10000	0.00281	
WV Specific 100 mesh Sand	Nabors Completion and Production Services	Sand - Bulk - West Virginia	Crystalline Silica, quartz	14808-60-7	99.90000	1.23331	
			Aluminum Oxide	1344-28-1	1.10000	0.01358	
			Iron Oxide	1309-37-1	0.10000	0.00124	



RECEIVED
Office of Oil and Gas
DEC 05 2013
WV Department of Environmental Protection

01/17/2014

WFR-3B	Nabors Completion and Production Services	Friction Reducer	Titanium Oxide	13463-67-7	0.10000	0.00124	
			Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8	50.00000	0.02975	
			Ethoxylated alcohols	68551-12-2	15.00000	0.00892	
			Ethoxylated oleylamine	26635-93-8	5.00000	0.00298	
LSG-100L	Nabors Completion and Production Services	Gelling Agents					
			Petroleum Distillates	64742-47-8	70.00000	0.03905	
HCl Acid (12.5%-18.0%)	Nabors Completion and Production Services	Bulk Acid					
			Hydrogen Chloride	7647-01-0	18.00000	0.03096	
OB-2	Nabors Completion and Production Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00937	
			Silica, crystalline quartz	7631-86-9	10.00000	0.00094	
KR-153SL	Nabors Completion and Production Services	Biocides					
			Polyethylene-Glycol	25322-68-3	50.00000	0.00559	
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00224	
Super GREEN SOLV	Nabors Completion and Production Services	Paraffin & Scale Additives					
			BTEX Free Aliphatic Hydrocarbon	64742-96-7	100.00000	0.00580	
EB-4L	Nabors Completion and Production Services	Gel Breakers					
			Cellulase enzyme	Proprietary	100.00000	0.00044	
			Sugar	57-50-1	100.00000	0.00044	
			Demulsifier Base	Proprietary	100.00000	0.00044	
			Water	7732-18-5	100.00000	0.00044	
			Breaker Component	Proprietary	100.00000	0.00044	
			Ethylene Glycol	107-21-1	40.00000	0.00018	
Acid Inhibitor 2 (AI-2)	Nabors Completion and Production Services	Acid Corrosion Inhibitors					
			isopropyl Alcohol	67-63-0	40.00000	0.00013	
			Glycol Ethers	111-46-6	40.00000	0.00013	
			Propargyl Alcohol	107-19-7	40.00000	0.00013	
			Ethoxylated Nonylphenol	68412-54-4	13.00000	0.00004	
			Tar bases, quinoline deriv's, 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.

Other Ingredients	Nabors Completion and Production Services	Other Ingredients						
		Water	7732-18-5	87.50000	0.15050			
		guar gum	9000-30-0	50.00000	0.02790			
		Water	7732-18-5	40.00000	0.02380			
		Polyacrylamide	57-55-6	40.00000	0.02380			
		Water	7732-18-5	60.00000	0.00902			
		Water	7732-18-5	80.00000	0.00895			
		Propylene glycol	57-55-6	15.00000	0.00892			
		Proprietary	Proprietary	50.00000	0.00752			
		Proprietary	Proprietary	15.00000	0.00226			
		Proprietary	Proprietary	15.00000	0.00226			
		Proprietary	Proprietary	15.00000	0.00226			
		Vinylidene chloride-methyl acrylate copolymer	25038-72-6	20.00000	0.00187			
		Crystalline Silica (in the form of quartz)	14808-60-7	2.00000	0.00112			
		Surfactant	68439-51-0	2.00000	0.00112			
		Microparticle	Proprietary	1.00000	0.00060			
		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			
		Organophilic 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)