

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: 11/18/2013
API #: 47-085-09964

Farm name: Andrew Williamson, et al Operator Well No.: O'Neil Unit 1H

LOCATION: Elevation: 1,142' Quadrangle: Pullman 7.5'

District: Union County: Ritchie
Latitude: 2.695' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 4.702' Feet West of 80 Deg. 52 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#	420'	420'	583 Cu Ft Class A
Inspector: David Cowan	9 5/8" 36#	2580'	2580'	1050 Cu Ft Class A
Date Permit Issued: 7/21/2012	5 1/2" 20#	15,184'	15,184'	3,747 Cu Ft Class H
Date Well Work Commenced: 11/21/2012				
Date Well Work Completed: 5/9/2013				
Verbal Plugging: N/A	2 3/8" 4.7#	6,890'		
Date Permission granted on: N/A				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 6620' TVD (Deepest Point Drilled)				
Total Measured Depth (ft): 15,184' MD, 6597' TVD (BHL)				
Fresh Water Depth (ft.): 125'				
Salt Water Depth (ft.): 2000'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): None Available				
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) 6566' (TOP)

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

Final open flow 3,098 MCF/d Final open flow --- Bbl/d

Time of open flow between initial and final tests --- Hours

Static rock Pressure 3000' 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

11/18/13
Date

01/10/2014

85-09964

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 wireline logs on the first well on a multi-well pad (Nicholson 2H API# 47-085-09960). Please reference the wire line logs submitted with form WR-35 for Nicholson Unit 2H

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: 7,026-15,128 (1,440 Holes)

Frac'd w/ 11,500 gals 15% HCL Acid, 209,732 bbls Slick Water carrying 1,070,309# 100 mesh, 4,456,427# 40/70 sand and 2,460,767# 20/40 sand.

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

Formations Encountered: _____ **Top Depth** / _____ **Bottom Depth**
Surface:

Big Lime	est. 2115'	2178'
Big Injun	est. 2179'	2462'
Gantz Sand	est. 2463'	2597'
Fifty Foot Sandstone	est. 2598'	2709'
Gordon	est. 2710'	3084'
Fifth Sandstone	est. 3085'	3191'
Bayard	est. 3192'	3961'
Speechley	est. 3962'	4165'
Balltown	est. 4166'	4636'
Bradford	est. 4637'	5027'
Benson	est. 5028'	5268'
Alexander	est. 5269'	5458'
Elk	5459'	6234'
Sycamore SS	6235'	6403'
Middlesex Shale	6403'	6512'
Burkett Shale	6513'	6544'
Tully LS	6545'	6566'
Marcellus	6566'	

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Office of Oil and Gas
November 9, 2013
Department of Environmental Protection

01/10/2014



Antero Resources
 O'Neil Unit 1H
 Ritchie County WV
 Northing: 14233112.07
 Easting: 1673136.76
 Original Wellpath

WELL DETAILS: O'Neil Unit 1H

+N/S	0.0	+E/W	0.0	Northing	14233112.07	Easting	1673136.76	Longitude	80° 53' 4.239 W
Ground Level:		1142.0		Slot					

PROJECT DETAILS: Ritchie County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1983 (NAD83 CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

REFERENCE INFORMATION

Coordinates (N/E) Reference: USGS (NAD 83) 11, 544, 544
 Vertical (VD) Reference: O'Neil Unit 1H 25.48 @ 1187.50ft
 Measured Depth Reference: O'Neil Unit 1H 25.48 @ 1187.50ft
 Calculation Method: Minimum Curvature

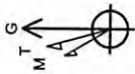
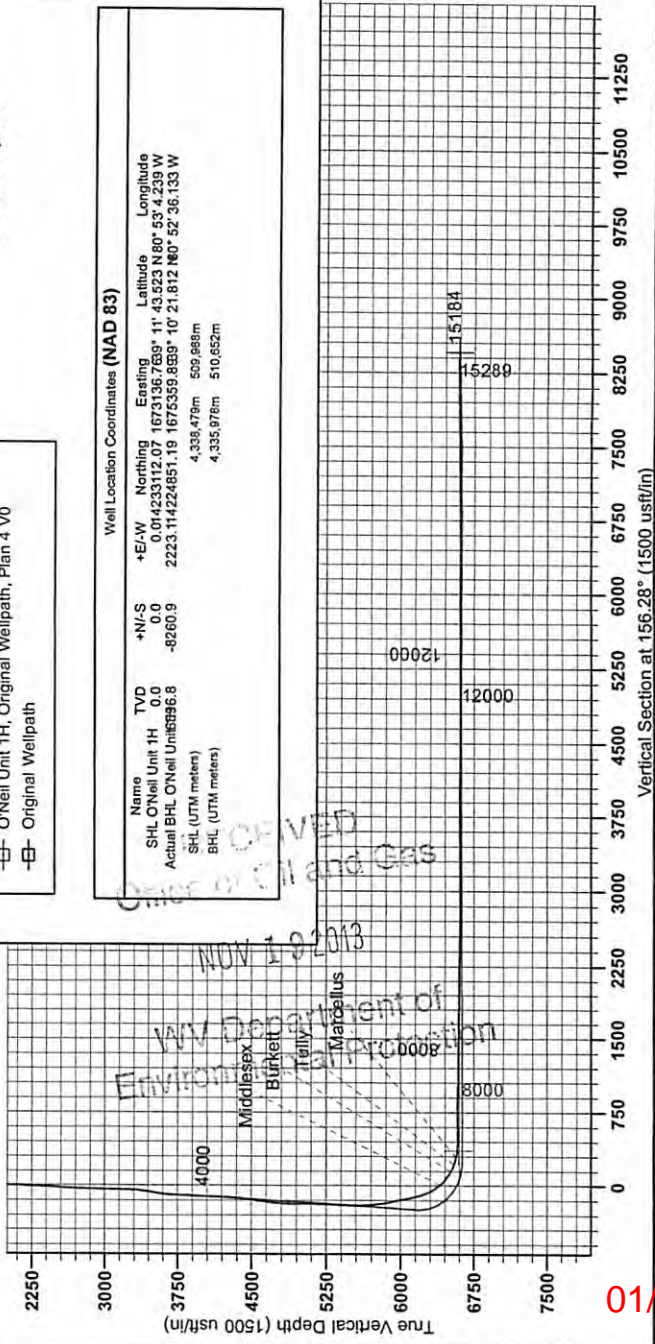
Genie Lightfoot
 14:33, July 18 2013
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

LEGEND

- Nicholson Unit 2H, Original Wellpath, Original Wellpath V0
- ◇— O'Neil Unit 2H, Original Wellpath, Original Wellpath V0
- O'Neil Unit 1H, Original Wellpath, Plan 4 V0
- Original Wellpath

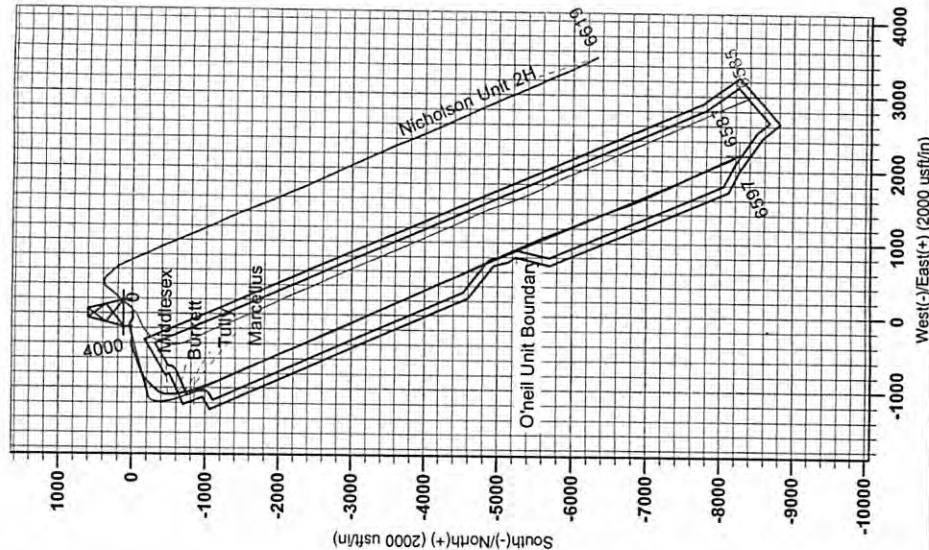
Well Location Coordinates (NAD 83)

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL O'Neil Unit 1H	0.0	0.0	0.0	14233112.07	1673136.76	80° 53' 4.239 W	
Actual BHL O'Neil Unit 6936.8	-8260.9	2223.114224851.19	1675359.8959	10° 21' 81.2 N	80° 52' 36.133 W		
SHL (UTM meters)	4,336.476m	509.698m					
BHL (UTM meters)	4,335.976m	510.652m					



To convert Magnetic North to Grid, Subtract 8.37°
 To convert True North to Grid, Subtract 0.07°

Magnetic Field
 Strength: 52493.2nT
 Dip Angle: 66.93°
 Declination: 8.37°
 Model: IGRF2010



85.09964

01/10/2014

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/1/2013
Job End Date:	5/10/2013
State:	West Virginia
County:	Ritchie
API Number:	47-085-09964-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	O'neil Unit 1H
Longitude:	-80.88451110
Latitude:	39.19542220
Datum:	NAD27
Federal/Tribal Well:	NO
Total Base Water Volume (gal):	9,169,692
Total Base Non Water Volume:	391,622



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier	Water	7732-18-5	100.00000	90.20591	
Sand, White, 40/70	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00000	5.25660	
Sand, White, 20/40	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00000	2.87974	
Sand, White, 100 mesh	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00000	1.26050	
GW-3LDF	Baker Hughes	Gelling Agent	Guar Gum	9000-30-0	60.00000	0.06460	SmartCare Product
			Petroleum Distillates	64742-47-8	30.00000	0.03230	SmartCare Product
			Paraffinic Petroleum Distillate	64742-55-8	30.00000	0.03230	SmartCare Product
			1-Butoxy-2-Propanol	5131-66-8	5.00000	0.00538	SmartCare Product
			Crystalline Silica, Quartz (SiO2)	14808-60-7	5.00000	0.00538	SmartCare Product
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00538	SmartCare Product
HCl, 10.1 - 15%	Baker Hughes	Acidizing	Water	7732-18-5	85.00000	0.10665	
			Hydrochloric Acid	7647-01-0	15.00000	0.01882	
FRW-18	Baker Hughes	Friction Reducer	Petroleum Distillates	64742-47-8	30.00000	0.01544	SmartCare Product

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Enzyme G-NE	Baker Hughes	Breaker	Water	7732-18-5	95.00000	0.01443	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000	0.00076	
Alpha 1427	Baker Hughes	Biocide	Glutaraldehyde	111-30-8	30.00000	0.00675	SmartCare Product
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00225	SmartCare Product
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00113	SmartCare Product
			Ethanol	64-17-5	5.00000	0.00113	SmartCare Product
HCl, 20.1 - 28%	Baker Hughes	Acidizing	Water	7732-18-5	72.00000	0.00411	
			Hydrochloric Acid	7647-01-0	28.00000	0.00160	
Scalotrol 720	Baker Hughes	Scale Inhibitor	Ethylene Glycol	107-21-1	30.00000	0.00475	
			Calcium Chloride	10043-52-4	5.00000	0.00079	
Ferrotrol 300L	Baker Hughes	Iron Control	Citric Acid	77-92-9	60.00000	0.00054	SmartCare Product
Cl-14	Baker Hughes	Corrosion Inhibitor	Polyoxyalkylenes	Trade Secret	30.00000	0.00006	
			Fatty Acids	Trade Secret	10.00000	0.00002	
			Olefin	Trade Secret	5.00000	0.00001	
			Propargyl Alcohol	107-19-7	5.00000	0.00001	
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 Chemicals	Water	7732-18-5		0.04753	
			Poly (acrylamide-co-acrylic acid)	Trade Secret		0.01544	
			Polyacrylate	Trade Secret		0.00317	
			Sorbitan Monooleate	Trade Secret		0.00257	
			Salt	Trade Secret		0.00257	
			Ethoxylated Alcohol	Trade Secret		0.00103	
			Methanol	67-56-1		0.00021	
			2-Butoxy-1-Propanol	15821-83-7		0.00009	
			Modified Thiorea Polymer	68527-49-1		0.00001	
			Potassium Chloride	7447-40-7		0.00001	
			Sodium Chloride	7647-14-5		0.00000	
			Formaldehyde	50-00-0		0.00000	
			Hydrochloric Acid	7647-01-0		0.00000	

* 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)