

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas  
Well Operator's Report of Well Work

Farm name: Heartwood Forest Fund IV Operator Well No.: 513042

LOCATION: Elevation: 794' Quadrangle: Pennsboro

District: Clay County: Ritchie, WV  
Latitude: 14,600' Feet South of 39 Deg. 17 Min. 30 Sec.  
Longitude 6,440' Feet West of 80 Deg. 55 Min. 00 Sec.

Company: EQT Production Company

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
EQT Plaza, Suite 1700				
625 Liberty Avenue, Pittsburgh, PA 15222	26	71	71	103
Agent: Cecil Ray	20	470	470	706
Inspector: David Cowan	13 3/8	1,000	1,000	979
Date Permit Issued: 6/12/12	9 5/8	5,080	5,080	1,843
Date Well Work Commenced: 4/4/13	5 1/2	10,161	10,161	1,789
Date Well Work Completed: 6/14/13				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): 6,088' (Lateral TVD)	6,188'	(Pilot Hole TVD)		
Total Measured Depth (ft): 10,161'				
Fresh Water Depth (ft.): 107', 380'				
Salt Water Depth (ft.): No visible show.				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 829'				
Void(s) encountered (N/Y) Depth(s) No				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 6,035  
Gas: Initial open flow 2,674 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 9,216 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 63.5 Hours  
Static rock Pressure 1,200 psig (surface pressure) after 70.5 Hours

Second producing formation No second 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.

  
\_\_\_\_\_  
(Signature)

10/2/2013  
Date

03/07/2014

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

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

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Open Hole, MWD, Gamma, & CBL logs

**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:

**See Attachment**

Re-perforated stage 10 due to high treating pressures

Plug Back Details Including Plug Type and Depth(s): **Pumped solid cement plug from 6,188' to 5,042'.**

Formations Encountered: \_\_\_\_\_ Top Depth \_\_\_\_\_ / \_\_\_\_\_ Bottom Depth \_\_\_\_\_  
Surface: \_\_\_\_\_

SAND / SHALE / 0 / 829 / 829 --

PITTSBURGH COAL / 829 / 835 / 6 -- SAND / SHALE / 835 / 1,968 / 1,133 --

BIG LIME / 1,968 / 2,080 / 112 -- BIG INJUN / 2,080 / 2,375 / 295 --

WEIR / 2,375 / 2,580 / 205 -- GANTZ / 2,580 / 2,720 / 140 --

FIFTY FOOT / 2,720 / 2,801 / 81 -- THIRTY FOOT / 2,801 / 2,845 / 44 --

GORDON / 2,845 / 2,926 / 81 -- FOURTH SAND / 2,926 / 3,115 / 189 --

BAYARD / 3,115 / 3,461 / 346 -- WARREN / 3,461 / 3,545 / 84 --

SPEECHLEY / 3,545 / 3,930 / 385 -- BALLTOWN A / 3,930 / 4,215 / 285 --

RILEY / 4,215 / 4,562 / 347 -- BENSON / 4,562 / 4,837 / 275 --

ALEXANDER / 4,837 / 5,712 / 875 -- RHINESTREET / 5,712 / 5,768 / 55-

SONYEA / 5,768 / 5,878 / 109 -- MIDDLESEX / 5,878 / 5,933 / 55 --

GENESSEE / 5,933 / 5,987 / 53 -- GENESEO / 5,987 / 6,014 / 27 --

TULLY / 6,014 / 6,028 / 14 -- HAMILTON / 6,028 / 6,035 / 7

Marcellus blk shale / 6,035 / 6,090 / 55 -- Onondaga / 6,090 / 6,188 / 98 --

03/07/2014

**513042 - Perforations**

<b>Zone/Stage</b>	<b>Date</b>	<b>Top Plug Depth (ftKB)</b>	<b>Bottom Plug Depth (ftKB)</b>	<b>Top Perf Depth (ftKB)</b>	<b>Bottom Perf Depth (ftKB)</b>	<b>Shots/ft</b>	<b>Number of Shots</b>
1	9/11/2013 22:50	9,997.00	NA	10,011.00	10,103.00	4	32
2	9/12/2013 4:45	9,847.00	9,997.00	9,861.00	9,983.00	4	40
3	9/12/2013 10:00	9,697.00	9,847.00	9,711.00	9,833.00	4	40
4	9/12/2013 14:01	9,547.00	9,697.00	9,561.00	9,683.00	4	40
5	9/12/2013 18:30	9,397.00	9,547.00	9,411.00	9,533.00	4	40
6	9/13/2013 0:00	9,097.00	9,247.00	9,111.00	9,233.00	4	40
7	9/13/2013 0:50	9,247.00	9,397.00	9,261.00	9,383.00	4	40
8	9/13/2013 9:32	8,947.00	9,097.00	8,961.00	9,083.00	4	40
9	9/13/2013 13:22	8,797.00	8,947.00	8,811.00	8,933.00	4	40
10	9/13/2013 17:00	8,647.00	8,797.00	8,661.00	8,783.00	4	40
10.1	9/14/2013 0:15	8,647.00	8,797.00	8,616.00	8,678.00	4	32
11	9/14/2013 4:30	8,452.00	8,602.00	8,466.00	8,588.00	4	40
12	9/14/2013 7:59	8,302.00	8,452.00	8,316.00	8,438.00	4	40
13	9/14/2013 12:30	8,152.00	8,302.00	8,166.00	8,288.00	4	40
14	9/14/2013 17:00	8,002.00	8,152.00	8,016.00	8,138.00	4	40
15	9/14/2013 22:00	7,852.00	8,002.00	7,866.00	7,988.00	4	40
16	9/15/2013 1:35	7,702.00	7,852.00	7,716.00	7,838.00	4	40
17	9/15/2013 5:16	7,552.00	7,702.00	7,566.00	7,688.00	4	40
18	9/15/2013 8:30	7,402.00	7,552.00	7,416.00	7,538.00	4	40
19	9/15/2013 12:00	7,252.00	7,402.00	7,266.00	7,388.00	4	40
20	9/15/2013 17:18	7,102.00	7,252.00	7,116.00	7,238.00	4	40
21	9/15/2013 20:55	6,952.00	7,104.00	6,966.00	7,088.00	4	40
22	9/16/2013 0:30	6,802.00	6,952.00	6,816.00	6,938.00	4	40
23	9/16/2013 4:35	6,652.00	6,802.00	6,666.00	6,788.00	4	40
24	9/16/2013 8:32	6,502.00	6,652.00	6,516.00	6,638.00	4	40
25	9/16/2013 12:30	NA	6,502.00	6,366.00	6,488.00	4	40

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