

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: 12/9/13  
API #: 47-103-02885

2/14/14

Farm name: Richard M. & M. Underwood Operator Well No.: 514677

LOCATION: Elevation: 941' Quadrangle: Big Run

District: Grant County: Wetzel  
Latitude: 10,047 Feet South of 39 Deg. 35 Min. 00 Sec.  
Longitude 6,020 Feet West of 80 Deg. 30 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	40	40	93
Agent: Rex C. Ray	13 3/8	787	787	885
Inspector: David Scranage	9 5/8	3,149	3,149	1,288
Date Permit Issued: 5/31/13	5 1/2	11,947	11,947	2,248
Date Well Work Commenced: 6/1/13				
Date Well Work Completed: 8/1/13				
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): 7,165'				
Total Measured Depth (ft): 11,952'				
Fresh Water Depth (ft.): 80', 663'				
Salt Water Depth (ft.): 1,580'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 209', 506', 551', 639'				
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 Geneseo Pay zone depth (ft) 6,948  
Gas: Initial open flow 5,136 MCF/d Oil: Initial open flow NA Bbl/d  
Final open flow 6,096 MCF/d Final open flow NA Bbl/d  
Time of open flow between initial and final tests 56.5 Hours  
Static rock Pressure 1,360 psig (surface pressure) after 57 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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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.

  
Signature

2/26/2014  
Date

06/27/2017

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 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 Attached

Amended Report with FB Data

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

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

Sand/Shale / 0 / 209 / 209 -- Coal / 209 / 212 / 3 -- Sand/Shale / 212 / 506 / 294 --  
Coal / 506 / 509 / 3 -- Sand/Shale / 509 / 551 / 42 -- Coal / 551 / 555 / 4 -- Sand/Shale / 555 / 639 / 84  
Coal / 639 / 645 / 6 -- Sand/Shale / 645 / 1732 / 1087 -- Maxton / 1732 / 1853 / 121 --  
Big Lime / 1853 / 2220 / 367 -- Weir / 2220 / 2425 / 205 -- Gantz / 2245 / 2540 / 115 --  
50F / 2540 / 2618 / 78 -- 30F / 2618 / 2668 / 50 -- Gordon / 2668 / 2735 / 67 -- 4TH / 2735 / 2841 / 106  
Bayard / 2841 / 3327 / 486 -- Warren / 3327 / 3469 / 142 -- Speechley / 3469 / 3855 / 386 --  
Balltown A / 3855 / 4314 / 459 -- Riley / 4314 / 4938 / 624 -- Benson / 4938 / 5356 / 418 --  
ALEXANDER / 5356 / 6598 / 1242 -- SONYEA / 6598 / 6784 / 186 -- MIDDLESEX / 6784 / 6841 / 57  
GENESSEE / 6841 / 6948 / 107 -- GENESEO / 6948 / 7165 / 217 --

**514677 - 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>Toe Pop</b>	11/20/13 4:06	11,767.00	NA	11,918.00	11,922.00	NA
1	11/20/13 13:50	11,767.00	NA	11,781.00	11,873.00	4
2	11/20/13 18:00	11,617.00	11,767.00	11,751.00	11,633.00	4
3	11/20/13 23:20	11,467.00	11,617.00	11,601.00	11,483.00	4
4	11/21/13 7:44	11,317.00	11,467.00	11,331.00	11,453.00	4
5	11/21/13 11:50	11,167.00	11,317.00	11,181.00	11,303.00	4
6	11/21/13 20:50	11,017.00	11,167.00	11,031.00	11,153.00	4
7	11/22/13 5:51	10,867.00	11,017.00	10,881.00	11,003.00	4
8	11/22/13 17:51	10,717.00	10,867.00	10,731.00	10,853.00	4
9	11/23/13 0:15	10,567.00	10,717.00	10,581.00	10,703.00	4
10	11/23/13 5:08	10,418.00	10,567.00	10,431.00	10,553.00	4
11	11/23/13 8:49	10,267.00	10,418.00	10,280.00	10,403.00	4
12	11/23/13 12:20	10,117.00	10,267.00	10,131.00	10,253.00	4
13	11/23/13 16:27	9,967.00	10,117.00	9,981.00	10,103.00	4
14	11/23/13 22:09	9,817.00	9,967.00	9,831.00	9,953.00	4
15	11/24/13 2:19	9,667.00	9,817.00	9,681.00	9,803.00	4
16	11/24/13 7:00	9,517.00	9,667.00	9,531.00	9,653.00	4
17	11/24/13 11:18	9,367.00	9,517.00	9,381.00	9,503.00	4
18	11/24/13 23:30	9,217.00	9,367.00	9,231.00	9,353.00	4
19	11/25/13 4:35	9,067.00	9,217.00	9,081.00	9,203.00	4
20	11/25/13 9:08	8,917.00	9,067.00	8,933.00	9,053.00	4
21	11/25/13 13:00	8,767.00	8,917.00	8,781.00	8,903.00	4
22	11/25/13 16:59	8,617.00	8,767.00	8,631.00	8,753.00	4
23	11/25/13 21:10	8,467.00	8,617.00	8,481.00	8,603.00	4
24	11/26/13 1:10	8,317.00	8,467.00	8,331.00	8,453.00	4
25	11/26/13 5:35	8,167.00	8,317.00	8,181.00	8,303.00	4
26	11/26/13 9:30	8,017.00	8,167.00	8,031.00	8,153.00	4
27	11/26/13 13:06	7,867.00	8,017.00	7,883.00	8,003.00	4
28	11/26/13 15:00	NA	7,867.00	7,731.00	7,853.00	4

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514677 - Stimulated Stages

Zone/Stage	P Break (psi)	Avg Treat Pressure (psi)	Avg rate (bbl/min)	ISIP (psi)	Frac Gradient (psi/ft)	15 Min. SIP (psi)	Fluid Volume (bbl)	Start Date	End Date	Proppant (lb)
Toe Pop	NA	6,105.00	15.0	NA	NA	NA	523	11/20/2013 3:52	11/20/2013 5:16	NA
1	8,871.00	7,748.00	99.6	4,128.00	1.01	3,510.00	4,980	11/20/2013 15:26	11/20/2013 16:29	200,535
2	7,053.00	8,217.00	98.7	4,440.00	1.05	3,609.00	4,990	11/20/2013 20:16	11/20/2013 21:30	201,510
3	6,960.00	8,485.00	96.0	5,139.00	1.15	3,769.00	4,938	11/21/2013 3:06	11/21/2013 4:23	200,206
4	7,217.00	8,185.00	91.3	4,908.00	1.12	3,838.00	4,994	11/21/2013 9:10	11/21/2013 10:27	201,006
5	7,385.00	8,634.00	92.7	4,913.00	1.12	3,871.00	5,043	11/21/2013 17:47	11/21/2013 19:03	199,170
6	7,030.00	7,665.00	89.2	5,103.00	1.15	4,115.00	4,995	11/22/2013 2:48	11/22/2013 4:12	202,147
7	7,600.00	8,490.00	101.0	4,896.00	1.12	3,937.00	5,039	11/22/2013 15:15	11/22/2013 16:28	199,903
8	7,599.00	8,515.00	98.9	4,997.00	1.14	3,966.00	5,020	11/22/2013 18:15	11/22/2013 20:00	200,288
9	8,205.00	8,554.00	97.5	4,977.00	1.13	3,975.00	4,967	11/23/2013 2:01	11/23/2013 3:14	200,555
10	7,361.00	8,554.00	97.4	5,163.00	1.16	3,952.00	5,073	11/23/2013 6:16	11/23/2013 7:31	200,887
11	6,540.00	8,428.00	100.1	4,723.00	1.1	3,961.00	4,944	11/23/2013 9:53	11/23/2013 11:05	200,026
12	6,633.00	8,480.00	99.8	5,007.00	1.14	4,068.00	4,931	11/23/2013 14:03	11/23/2013 15:15	200,668
13	5,995.00	8,438.00	98.9	5,112.00	1.16	4,076.00	4,956	11/23/2013 18:51	11/23/2013 20:03	201,127
14	6,726.00	8,010.00	100.0	4,524.00	1.08	3,919.00	4,524	11/23/2013 23:36	11/24/2013 0:51	201,569
15	8,121.00	7,946.00	99.6	4,801.00	1.12	4,032.00	5,015	11/24/2013 4:03	11/24/2013 5:14	200,577
16	8,722.00	7,907.00	100.5	5,033.00	1.15	4,108.00	4,965	11/24/2013 8:32	11/24/2013 9:45	202,501
17	8,676.00	8,357.00	100.3	5,155.00	1.17	4,125.00	5,947	11/24/2013 13:30	11/24/2013 20:02	200,120
18	6,976.00	7,889.00	99.2	4,876.00	1.13	3,983.00	5,057	11/25/2013 0:56	11/25/2013 2:51	200,275
19	6,746.00	8,024.00	100.2	4,630.00	1.1	4,076.00	4,977	11/25/2013 6:11	11/25/2013 7:21	200,728
20	7,792.00	8,204.00	100.0	5,126.00	1.17	4,065.00	4,940	11/25/2013 10:47	11/25/2013 11:56	197,801
21	6,308.00	7,837.00	99.9	4,745.00	1.11	4,053.00	4,745	11/25/2013 14:38	11/25/2013 15:47	200,386
22	6,304.00	8,087.00	100.8	4,723.00	1.11	3,942.00	5,125	11/25/2013 18:13	11/25/2013 19:26	201,444
23	7,926.00	8,179.00	100.2	5,212.00	1.18	4,053.00	5,212	11/25/2013 22:23	11/25/2013 23:29	200,195
24	6,770.00	8,058.00	100.4	4,841.00	1.13	3,860.00	4,904	11/26/2013 2:54	11/26/2013 4:00	200,435
25	7,218.00	8,099.00	100.6	4,996.00	1.15	3,933.00	4,910	11/26/2013 7:00	11/26/2013 8:06	200,294
26	7,788.00	8,094.00	100.4	5,227.00	1.18	4,045.00	4,963	11/26/2013 10:52	11/26/2013 12:00	203,010
27	6,948.00	7,956.00	100.3	4,776.00	1.12	3,851.00	4,953	11/26/2013 14:28	11/26/2013 15:35	201,836
28	7,299.00	7,749.00	100.7	4,950.00	1.15	3,896.00	5,139	11/26/2013 18:18	11/26/2013 19:26	198,317

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