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: 12/10/13
API #: 47-017-05882

Farm name: I.L. Morris Operator Well No.: 512450

LOCATION: Elevation: 1,250' Quadrangle: Oxford

District: Southwest County: Doddridge
Latitude: 2,380' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 7,180' Feet West of 80 Deg. 47 Min. 30 Sec.

Company: EQT Production Company

Address: EQT Plaza, Suite 1700	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
625 Liberty Avenue, Pittsburgh, PA 15222	20	42	42	40
Agent: Cecil Ray	13 3/8	981	981	795.2
Inspector: David Scranage	9 5/8	3,146	3,146	1,253
Date Permit Issued: 10/27/2009	5 1/2	10,256	10,256	1,286.4
Date Well Work Commenced: 3/13/10				
Date Well Work Completed: 6/25/10				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☑				
Total Vertical Depth (ft): 6,691'				
Total Measured Depth (ft): 10,273'				
Fresh Water Depth (ft.): 120', 610'				
Salt Water Depth (ft.): 1,470'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 99', 616', 920'				
Void(s) encountered (N/Y) Depth(s) No				

RECEIVED
Office of Oil and Gas
MAR 0 8 2014
WV Department of Environmental Protection

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation Marcellus Pay zone depth (ft) 6,644
Gas: Initial open flow 9247 MCF/d Oil: Initial open flow NA Bbl/d
Final open flow 5936 MCF/d Final open flow NA Bbl/d
Time of open flow between initial and final tests 43 Hours
Static rock Pressure 745 psig (surface pressure) after 48 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

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

3/6/2014
Date

17-05882

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, and 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

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

Formations Encountered: Top Depth / Bottom Depth
Surface:

Sand / Shale / / 99 / 99 -- Coal / 99 / 103 / 4 --
Sand / Shale / 103 / 616 / 513 -- Coal / 616 / 620 / 4 -- Sand / Shale / 620 / 920 / 300 --
Coal / 920 / 924 / 4 -- Sand / Shale / 924 / 1,746.8 / 822.8 -- Maxton / 1,746.84 / 1,942.9 / 196.06 --
Big Lime / 1,942.9 / 2,003.56 / 60.66 -- Big Injun / 2,031.72 / 2,242.94 / 211.22 -- Weir / 2,242.94 / 2,441.16 / 198.22 --
Gantz / 2,449.83 / 2,520.24 / 70.41 -- Fifty foot / 2,520.24 / 2,632.89 / 112.65 -- Thirty foot / 2,632.89 / 2,683.8 / 50.91 --
Gordon / 2,683.8 / 2,792.11 / 108.31 -- Forth Sand / 2,792.11 / 2,931.84 / 139.73 -- Bayard / 2,974.09 / 3,305.9 / 331.81 --
Warren / 3,305.9 / 3,381.6 / 75.7 -- Speechley / 3,381.6 / 3,879.35 / 497.75 -- Balltown A / 3,879.35 / 4,026.15 / 146.8 --
Riley / 4,504.02 / 4,927.61 / 423.59 -- Benson / 4,927.61 / 5,172.05 / 244.44 -- Alexander / 5,172.05 / 6,304.66 / 1,132.61 --
Sonyea / 6,304.66 / 6,455.06 / 150.4 -- Middlesex / 6,455.06 / 6,508.66 / 53.6 -- Genesee / 6,508.66 / 6,581.27 / 72.61 --
Geneseo / 6,581.27 / 6,616.19 / 34.92 -- Tully / 6,616.19 / 6,631.88 / 15.69 -- Hamilton / 6,631.88 / 6,644.83 / 12.95 --
Marcellus / 6,644.83 / 6,691 / 47.13

512450 - Perforations

Zone/Stage	Date	Top Plug Depth (ftKB)	Bottom Plug Depth (ftKB)	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Shots/ft
1	7/8/2010	9,932.00	NA	9,961.00	10,203.00	4
2	5/18/2011	9,632.00	9,932.00	9,661.00	9,903.00	4
3	5/18/2011	9,332.00	9,632.00	9,361.00	9,603.00	4
4	5/19/2011	9,032.00	9,332.00	9,061.00	9,303.00	4
5	5/20/2011	8,732.00	9,032.00	8,761.00	9,003.00	4
6	5/21/2011	8,432.00	8,732.00	8,461.00	8,703.00	4
7	5/21/2011	8,132.00	8,432.00	8,161.00	8,403.00	4
8	5/21/2011	7,832.00	8,132.00	7,861.00	8,103.00	4
9	5/22/2011	7,547.00	7,832.00	7,561.00	7,803.00	4
10	5/22/2011	NA	7,547.00	7,411.00	7,533.00	4

17-05882

512450 - Stimulated Stages								
Zone/Stage	*P Break (psi)*	*Avg Treat Pressure (psi)*	*Avg rate (bbl/min)*	*ISIP (psi)*	*15 Min. SIP (psi)*	*Fluid Volume (bbl)*	*Date*	*Proppant (lb)*
1	4,418.00	7,469.00	95.0	6,141.00	2,180.00	11,888	5/18/2011	331,302
2	4,461.00	6,869.00	100.0	4,227.00	2,175.00	10,678	5/18/2011	405,316
3	4,456.00	7,093.00	102.0	3,587.00	2,413.00	12,058	5/19/2011	406,473
4	5,179.00	7,376.00	103.0	4,551.00	2,407.00	10,802	5/20/2011	392,110
5	4,806.00	7,120.00	98.0	5,721.00	2,535.00	12,294	5/20/2011	396,292
6	5,258.00	6,476.00	100.0	3,685.00	2,266.00	10,465	5/21/2011	405,650
7	5,092.00	6,613.00	101.0	4,172.00	2,357.00	10,319	5/21/2011	407,571
8	5,649.00	6,742.00	102.0	3,758.00	2,534.00	10,672	5/22/2011	409,904
9	4,513.00	6,743.00	95.0	3,072.00	2,255.00	9,852	5/22/2011	404,890
10	4,328.00	5,417.00	93.0	3,192.00	2,215.00	5,108	5/22/2011	206,905

17.0588

PM JK

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: 12/10/13
API #: 47-017-05887

Farm name: I.L. Morris Operator Well No.: 512449

LOCATION: Elevation: 1,250' Quadrangle: Oxford

District: Southwest County: Doddridge, WV
Latitude: 2,410 Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 7,180 Feet West of 80 Deg. 47 Min. 30 Sec.

Company: EQT Production Company

Address: EQT Plaza, Suite 1700	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
625 Liberty Avenue, Pittsburgh, PA 15222	20	40	40	40
Agent: Cecil Ray	13 3/8	981	981	809
Inspector: David Scranage	9 5/8	3,178	3,178	1,148
Date Permit Issued: 11/06/2009	5 1/2	9,872	9,872	1,197
Date Well Work Commenced: 3/13/2010				
Date Well Work Completed: 5/20/2010				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☑				
Total Vertical Depth (ft): 6,744'				
Total Measured Depth (ft): 9,877'				
Fresh Water Depth (ft.): 120', 610'				
Salt Water Depth (ft.): 1,470'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 99', 616', 920'				
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) 6,644
Gas: Initial open flow 1,656 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 4,017 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 32 Hours
Static rock Pressure 784 psig (surface pressure) after 35 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

RECEIVED
Office of Oil and Gas
MAR 12 2014
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

3/11/2014
Date

17-05887

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 Attachment

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

Formations Encountered: Top Depth / Bottom Depth
Surface:

SAND / SHALE / 0 / 99 / 99 -- COAL / 99 / 103 / 4 --

SAND / SHALE / 103 / 616 / 513 -- COAL / 616 / 620 / 4 -- SAND / SHALE / 620 / 920 / 300 --

COAL / 920 / 924 / 4 -- SAND / SHALE / 924 / 1,746.8 / 822.8 -- MAXTON / 1,746.84 / 1,942.9 / 196.06 --

BIG LIME / 1,942.9 / 2,003.56 / 60.66 -- KEENER / 2,003.56 / 2,031.72 / 28.16 -- BIG INJUN / 2,031.72 / 2,242.94 / 211.22 --

WEIR / 2,242.94 / 2,441.16 / 198.22 -- BEREA / 2,441.16 / 2,449.83 / 8.67 -- GANTZ / 2,449.83 / 2,520.24 / 70.41 --

50F / 2,520.24 / 2,632.89 / 112.65 -- 30F / 2,632.89 / 2,683.8 / 50.91 -- GORDON / 2,683.8 / 2,792.11 / 108.31 --

4TH / 2,792.11 / 2,931.84 / 139.73 -- 5TH / 2,931.84 / 2,974.09 / 42.25 -- BAYARD / 2,974.09 / 3,305.9 / 331.81 --

WARREN / 3,305.9 / 3,381.6 / 75.7 -- SPEECHLEY / 3,381.6 / 3,879.35 / 497.75 -- BALLTOWN A / 3,879.35 / 4,026.15 / 146.8 --

BALLTOWN B / 4,026.15 / 4,264.7 / 238.55 -- BRADFORD / 4,264.7 / 4,504.02 / 239.32 -- RILEY / 4,504.02 / 4,927.61 / 423.59 --

BENSON / 4,927.61 / 5,172.05 / 244.44 -- ALEXANDER / 5,172.05 / 6,304.66 / 1,132.61 -- SONYEA / 6,304.66 / 6,455.06 / 150.4 --

MIDDLESEX / 6,455.06 / 6,508.66 / 53.6 -- GENESSEE / 6,508.66 / 6,581.27 / 72.61 -- GENESEO / 6,581.27 / 6,616.19 / 34.92 --

TULLY / 6,616.19 / 6,631.88 / 15.69 -- HAMILTON / 6,631.88 / 6,644.83 / 12.95 -- MARCELLUS BLK SHALE / 6,644 / 6,744 / 100 -

512449 - Perforations						
Zone/Stage	***Date***	***Top Plug Depth (ftKB)***	***Bottom Plug Depth (ftKB)***	***Top Perf Depth (ftKB)***	***Bottom Perf Depth (ftKB)***	***Shots/ft***
1	8/3/2010	9,548.00	***NA***	9,577.00	9,813.00	4
2	5/16/2011	9,248.00	9,548.00	9,277.00	9,519.00	4
3	5/25/2011	8,882.00	9,248.00	8,977.00	9,219.00	4
4	5/26/2011	8,582.00	8,882.00	8,611.00	8,853.00	4
5	5/27/2011	8,282.00	8,582.00	8,311.00	8,553.00	4
6	5/27/2011	7,982.00	8,282.00	8,011.00	8,253.00	4
7	5/28/2011	7,682.00	7,982.00	7,711.00	7,953.00	4
8	5/28/2011	7,397.00	7,682.00	7,411.00	7,653.00	4
9	6/1/2011	***NA***	7,397.00	7,261.00	7,383.00	4

17-0588 7

512449 - Stimulated Stages								
Zone/Stage	***P Break (psi)***	***Avg Treat Pressure (psi)***	***Avg rate (bbl/min)***	***ISIP (psi)***	***15 Min. SIP (psi)***	***Fluid Volume (bbl)***	***Date***	***Proppant (lb)***
1	4,855.00	7,232.00	98.0	5,744.00	2,081.00	10,764	5/16/2011	268,638
2	4,834.00	6,774.00	91.0	5,102.00	2,230.00	12,625	5/16/2011	255,884
3	4,358.00	7,178.00	99.0	5,700.00	2,556.00	10,354	5/26/2011	373,890
4	4,365.00	5,763.00	95.0	3,333.00	2,358.00	11,969	5/26/2011	413,207
5	4,948.00	5,746.00	98.0	3,484.00	2,690.00	10,315	5/27/2011	410,155
6	5,828.00	5,455.00	101.0	3,403.00	2,579.00	10,074	5/27/2011	408,175
7	4,693.00	5,570.00	103.0	3,401.00	2,506.00	10,007	5/28/2011	409,992
8	6,335.00	6,707.00	100.0	4,488.00	2,734.00	11,493	6/1/2011	402,433
9	7,296.00	7,781.00	100.0	3,298.00	2,617.00	5,310	6/1/2011	201,208

17.05887

PM JK

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: 12/10/13
API #: 47-017-05888

Farm name: I.L. Morris Operator Well No.: 512432

LOCATION: Elevation: 1,250' Quadrangle: Oxford

District: Southwest County: Doddridge
Latitude: 2,425 Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 7,180 Feet West of 80 Deg. 47 Min. 30 Sec.

Company: EQT Production Company

Address: EQT Plaza, Suite 1700	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
625 Liberty Avenue, Pittsburgh, PA 15222	20	42	42	40
Agent: Cecil Ray	13 3/8	979	979	909
Inspector: David Scranage	9 5/8	3,147	3,147	1,153
Date Permit Issued: 11/6/09	5 1/2	10,452	10,452	1,381
Date Well Work Commenced: 3/8/10				
Date Well Work Completed: 5/13/10				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☑				
Total Vertical Depth (ft): 6,655'				
Total Measured Depth (ft): 10,452'				
Fresh Water Depth (ft.): 120', 610'				
Salt Water Depth (ft.): 1,470'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 99', 616', 920'				
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) 6,644
Gas: Initial open flow 1,368 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 10,333 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 38 Hours
Static rock Pressure 1,208 psig (surface pressure) after 41.5 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

RECEIVED
Office of Oil & Gas
MAR 12 2014
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

3/11/2014
Date

17-05888

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 Attachment

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

Formations Encountered: Top Depth / Bottom Depth
Surface:

SAND / SHALE / / 99 / 99 -- FRESH WATER ZONE / 1 / 610 / 609 -- COAL / 99 / 103 / 4 --
SAND / SHALE / 103 / 616 / 513 -- COAL / 616 / 620 / 4 -- SAND / SHALE / 620 / 920 / 300 --
COAL / 920 / 924 / 4 -- SAND / SHALE / 924 / 1,746.8 / 822.8 -- MAXTON / 1,746.84 / 1,942.9 / 196.06 --
BIG LIME / 1,942.9 / 2,003.56 / 60.66 -- KEENER / 2,003.56 / 2,031.72 / 28.16 -- BIG INJUN / 2,031.72 / 2,242.94 / 211.22 --
WEIR / 2,242.94 / 2,441.16 / 198.22 -- BEREA / 2,441.16 / 2,449.83 / 8.67 -- GANTZ / 2,449.83 / 2,520.24 / 70.41 --
50F / 2,520.24 / 2,632.89 / 112.65 -- 30F / 2,632.89 / 2,683.8 / 50.91 -- GORDON / 2,683.8 / 2,792.11 / 108.31 --
4TH / 2,792.11 / 2,931.84 / 139.73 -- 5TH / 2,931.84 / 2,974.09 / 42.25 -- BAYARD / 2,974.09 / 3,305.9 / 331.81 --
WARREN / 3,305.9 / 3,381.6 / 75.7 -- SPEECHLEY / 3,381.6 / 3,879.35 / 497.75 -- BALLTOWN A / 3,879.35 / 4,026.15 / 146.8 --
BALLTOWN B / 4,026.15 / 4,264.7 / 238.55 -- BRADFORD / 4,264.7 / 4,504.02 / 239.32 -- RILEY / 4,504.02 / 4,927.61 / 423.59 --
BENSON / 4,927.61 / 5,172.05 / 244.44 -- ALEXANDER / 5,172.05 / 6,304.66 / 1,132.61 -- SONYEA / 6,304.66 / 6,455.06 / 150.4 --
MIDDLESEX / 6,455.06 / 6,508.66 / 53.6 -- GENESSEE / 6,508.66 / 6,581.27 / 72.61 -- GENESEO / 6,581.27 / 6,616.19 / 34.92 --
TULLY / 6,616.19 / 6,631.88 / 15.69 -- HAMILTON / 6,631.88 / 6,644.83 / 12.95 -- MARCELLUS BLK SHALE / 6,644.83 / 6,655 / 10.17 --

512432 - Perforations

Zone/Stage	Date	Top Plug Depth (ftKB)	Bottom Plug Depth (ftKB)	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Shots/ft
1	7/10/2010	10,145.00	NA	10,159.00	10,401.00	4
2	6/2/2011	9,995.00	10,145.00	10,009.00	10,131.00	4
3	6/2/2011	9,845.00	9,995.00	9,859.00	9,981.00	4
4	6/3/2011	9,695.00	9,845.00	9,709.00	9,831.00	4
5	6/4/2011	9,545.00	9,695.00	9,559.00	9,681.00	4
6	6/4/2011	9,395.00	9,545.00	9,409.00	9,531.00	4
7	6/5/2011	9,245.00	9,395.00	9,259.00	9,381.00	4
8	6/5/2011	9,095.00	9,245.00	9,109.00	9,231.00	4
9	6/6/2011	8,945.00	9,095.00	8,959.00	9,081.00	4
10	6/6/2011	8,795.00	8,945.00	8,809.00	8,931.00	4
11	6/7/2011	8,645.00	8,795.00	8,659.00	8,781.00	4
12	6/7/2011	8,495.00	8,645.00	8,509.00	8,631.00	4
13	6/7/2011	8,345.00	8,495.00	8,359.00	8,481.00	4
14	6/8/2011	8,195.00	8,345.00	8,209.00	8,331.00	4
15	6/8/2011	8,045.00	8,195.00	8,059.00	8,181.00	4
16	6/8/2011	7,895.00	8,045.00	7,909.00	8,031.00	4
17	6/9/2011	7,745.00	7,895.00	7,759.00	7,881.00	4
18	6/9/2011	7,595.00	7,745.00	7,609.00	7,731.00	4
19	6/9/2011	7,445.00	7,595.00	7,459.00	7,581.00	4
20	6/10/2011	7,295.00	7,445.00	7,309.00	7,431.00	4
21	6/10/2011	NA	7,295.00	7,159.00	7,281.00	4

17-0588

512432 - Stimulated Stages

Zone/Stage	P Break (psi)	Avg Treat Pressure (psi)	Avg rate (bbl/min)	ISIP (psi)	15 Min. SIP (psi)	Fluid Volume (bbl)	Date	Proppant (lb)
1	4,561.00	7,689.00	100.0	5,210.00	1,950.00	8,789	6/1/2011	257,890
2	4,692.00	7,124.00	101.0	3,585.00	1,901.00	5,996	6/2/2011	200,450
3	5,148.00	7,889.00	85.0	5,693.00	1,901.00	6,281	6/3/2011	197,286
4	4,843.00	7,698.00	85.0	5,947.00	3,282.00	6,750	6/4/2011	199,678
5	4,830.00	7,802.00	99.0	4,904.00	3,000.00	5,685	6/5/2011	196,251
6	4,442.00	7,380.00	101.0	5,205.00	2,333.00	5,969	6/5/2011	203,229
7	4,787.00	7,325.00	101.0	4,904.00	2,448.00	5,488	6/5/2011	199,399
8	4,760.00	7,891.00	97.0	4,885.00	2,680.00	5,564	6/6/2011	199,819
9	4,985.00	7,378.00	103.0	4,985.00	2,308.00	5,241	6/6/2011	206,711
10	5,150.00	7,371.00	101.0	4,844.00	2,524.00	5,255	6/6/2011	203,006
11	4,781.00	7,851.00	92.0	5,577.00	3,425.00	5,830	6/7/2011	201,464
12	4,469.00	7,785.00	104.0	4,308.00	2,885.00	6,165	6/7/2011	192,638
13	5,256.00	6,268.00	99.0	3,872.00	2,480.00	6,417	6/7/2011	223,318
14	5,016.00	6,433.00	98.0	3,341.00	2,710.00	6,417	6/8/2011	201,421
15	6,251.00	6,703.00	98.0	3,521.00	2,924.00	5,655	6/8/2011	208,814
16	6,409.00	6,382.00	98.0	3,710.00	2,930.00	5,655	6/9/2011	205,676
17	5,794.00	6,848.00	99.0	4,781.00	2,978.00	5,268	6/9/2011	201,668
18	4,912.00	6,671.00	100.0	4,672.00	2,815.00	5,291	6/9/2011	202,217
19	5,500.00	7,400.00	100.0	5,656.00	2,548.00	5,251	6/10/2011	200,256
20	5,355.00	7,550.00	100.0	5,735.00	2,852.00	5,191	6/10/2011	192,707
21	4,647.00	8,200.00	47.0	6,200.00	2,695.00	5,129	6/10/2011	13,361

17-0588?

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: 12/4/13
API #: 47-017-05957

Farm name: John R. Davies et al Operator Well No.: 513370

LOCATION: Elevation: 1,153' Quadrangle: West Union

District: West Union County: Doddridge, WV
Latitude: 7,120 Feet South of 39 Deg. 17 Min. 30 Sec.
Longitude 6,140 Feet West of 80 Deg. 45 Min. 00 Sec.

Company: EQT Production Company

Address: EQT Plaza, Suite 1700	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
625 Liberty Avenue, Pittsburgh, PA 15222	20	42	42	40
Agent: Cecil Ray	13 3/8	1,147	1,147	980
Inspector: David Scranage	9 5/8	3,192	3,192	1,363
Date Permit Issued: 6/18/2010	5 1/2	9,656	9,656	1,829
Date Well Work Commenced: 6/25/2010				
Date Well Work Completed: 2/4/2011				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☑				
Total Vertical Depth (ft): 6,692'				
Total Measured Depth (ft): 9,656'				
Fresh Water Depth (ft.): 109', 208', 693'				
Salt Water Depth (ft.): No visible show				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 403', 675'				
Void(s) encountered (N/Y) Depth(s) No				

RECEIVED
Office of Oil and Gas
MAR 08 2014
WV Department of Environmental Protection

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation Marcellus Pay zone depth (ft) 6,673'
Gas: Initial open flow 2325 MCF/d Oil: Initial open flow NA Bbl/d
Final open flow 2,256 MCF/d Final open flow NA Bbl/d
Time of open flow between initial and final tests 27 Hours
Static rock Pressure 2,368 psig (surface pressure) after 32 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

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

3/6/2014
Date

17-05957

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 Yes, Gyro & MWD Gamma 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

Plug Back Details Including Plug Type and Depth(s): Pumped solid cement plug from 3,218' to 3,030'

Formations Encountered: Surface:	Top Depth	/	Bottom Depth

Sand/Shale / 0 / 220 / 220 -- Red Rock / 220 / 230 / 10 -- Sand/Shale / 230 / 250 / 20

Red Rock / 250 / 265 / 15 -- Sand/Shale / 265 / 280 / 15 -- Red Rock / 280 / 290 / 10

Sand/Shale / 290 / 330 / 40 -- Red Rock / 330 / 350 / 20 -- Sand and Shale / 350 / 403 / 53

Coal / 403 / 406 / 3 -- Sand and Shale / 406 / 675 / 269 -- Coal / 675 / 677 / 2 --

Sand and Shale / 677 / 983 / 306 -- Warren / 3,273 / 3,342/ 68 --

Speechley / 3,342 / 4,028 / 685 -- Balltown B / 4,028 / 4,220 / 192 --

Riley / 4,492 / 4,930 / 437 -- Benson / 4,930 / 5,186 / 256 --

Alexander / 5,186 / 6,311 / 1,124 -- Sonyea / 6,311 / 6,459 / 148 --

Middlesex / 6,459 / 6,516 / 56 -- Genesee / 6,516 / 6,591/ 74 --

Geneseo / 6,591 / 6,631 / 40 -- Tully / 6,631 / 6,656 / 24 --

Hamilton / 6,656/ 6,673 / 17 -- Marcellus / 6,673 / 6,692 / 19

513370 - Perforations						
Zone/Stage	***Date***	***Top Plug Depth (ftKB)***	***Bottom Plug Depth (ftKB)***	***Top Perf Depth (ftKB)***	***Bottom Perf Depth (ftKB)***	***Shots/ft***
1	2/20/2011	9,364.00	***NA***	9,393.00	9,635.00	4
2	4/1/2011	9,064.00	9,364.00	9,093.00	9,335.00	4
3	4/1/2011	8,764.00	9,064.00	8,793.00	9,033.00	4
4	4/2/2011	8,464.00	8,764.00	8,493.00	8,733.00	4
5	4/2/2011	8,164.00	8,464.00	8,193.00	8,435.00	4
6	4/2/2011	7,864.00	8,164.00	7,893.00	8,135.00	4
7	4/4/2011	7,564.00	7,864.00	7,593.00	7,835.00	4
8	4/4/2011	7,264.00	7,564.00	7,293.00	7,533.00	4
9	4/4/2011	***NA***	7,264.00	6,993.00	7,233.00	4

17-0595 7

513370 - Stimulated Stages								
Zone/Stage	*P Break (psi)*	*Avg Treat Pressure (psi)*	*Avg rate (bbl/min)*	*ISIP (psi)*	*15 Min. SIP (psi)*	*Fluid Volume (bbl)*	*Date*	*Proppant (lb)*
1	6,424.00	7,493.00	95.1	3,122.00	2,417.00	9,714	4/1/2011	398,407
2	7,721.00	7,452.00	97.2	3,323.00	2,574.00	9,596	4/1/2011	397,724
3	6,605.00	7,255.00	99.6	3,291.00	2,505.00	9,748	4/1/2011	409,790
4	6,774.00	6,690.00	101.9	3,275.00	2,566.00	9,593	4/2/2011	404,230
5	5,684.00	6,433.00	100.6	3,388.00	2,659.00	9,704	4/2/2011	399,941
6	6,307.00	6,955.00	100.3	3,879.00	2,935.00	9,750	4/4/2011	399,240
7	6,058.00	7,086.00	100.2	3,482.00	2,695.00	9,715	4/4/2011	395,550
8	6,883.00	6,555.00	101.0	3,486.00	2,748.00	9,578	4/4/2011	401,293
9	7,281.00	6,585.00	98.8	3,368.00	2,728.00	9,662	4/5/2011	401,566

17-05457

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: 10/10/13
API #: 47-017-06035

Farm name: L.I. Morris Operator Well No.: 512496

LOCATION: Elevation: 1,166' Quadrangle: Oxford

District: Southwest County: Doddridge, WV
Latitude: 11,280' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 5,740' Feet West of 80 Deg. 47 Min. 30 Sec.

Company: EQT Production Company

Address: EQT Plaza, Suite 1700	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
625 Liberty Avenue, Pittsburgh, PA 15222	20	40	40	45
Agent: Cecil Ray	13 3/8	972	972	876
Inspector: David Scranage	9 5/8	3,145	3,145	1,313
Date Permit Issued: 10/24/2011	5 1/2	9,789	9,789	1,432
Date Well Work Commenced: 4/11/2012				
Date Well Work Completed: 6/27/2012				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☑				
Total Vertical Depth (ft): 6,583'				
Total Measured Depth (ft): 9,802'				
Fresh Water Depth (ft.): 295', 765'				
Salt Water Depth (ft.): 1,140'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 1,294, 1,328, 1,422				
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) 6243
Gas: Initial open flow 1,680 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 6,336 MCF/d Final open flow 0 Bbl/d
Time of open flow between initial and final tests 92.5 Hours
Static rock Pressure 1,225 psig (surface pressure) after 106.5 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

RECEIVED
Office of Oil and Gas
MAR 12 2014
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

3/11/2014
Date

17.06035

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 Attachment

Re-perforated stage 17 due to pressures

Sliding sleeves used on stages 1 - 10

Plug Back Details Including Plug Type and Depth(s): Pumped solid cement plug from 5,983' to 5,483'.

Plugged around shanked hammer bit.

Formations Encountered: Top Depth / Bottom Depth
Surface:

Sand / Shale / 0 / 1,861 / 1,861 -- Big Lime 1861 / 1923 / 62 -- Big Injun / 1923 / 2089 / 165 --
Weir / 2089 / 2345 / 257 -- Gantz / 2345 / 2465 / 119 -- 50F / 2465 / 2553 / 88 -- 30F / 2553 / 2607 / 54 --
Gordon / 2607 / 2700 / 94 -- Forth Sand / 2700 / 2872 / 172 -- Fifth Sand / 2872 / 2918 / 46 --
Bayard / 2918 / 3213 / 295 -- Warren / 3213 / 3284 / 72 -- Speechley / 3284 / 3817 /533 --
Balltown A / 3817 / 4162 / 345 -- Bradford / 4162 / 4731 / 570 -- Riley / 4731 / 4812 / 81 --
Benson / 4812 / 5059 / 246 -- Alexander / 5059 / 6002 / 943 -- Sonyea / 6002 / 6106 / 104 --
Middlesex / 6106 / 6142 / 36 -- Genesee / 6142 / 6192 / 50 -- Geneseo / 6192 / 6223 / 31 --
Tully / 6223 / 3236 / 13 -- Hamilton / 6236 / 6243 / 7 -- Marcellus / 6243 / 6583 / 340

512496 - Perforations

Zone/Stage	Date	Top Plug Depth (ftKB)	Bottom Plug Depth (ftKB)	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Shots/ft
1	8/24/2012	9,694.00	NA	9,761.00	9,761.00	4
2	8/25/2012	9,626.00	9,694.00	9,704.00	9,704.00	4
3	8/25/2012	9,558.00	9,626.00	9,637.00	9,637.00	4
4	8/25/2012	9,491.00	9,558.00	9,568.00	9,568.00	4
5	8/30/2012	9,423.00	9,491.00	9,491.00	9,491.00	4
6	8/31/2012	9,356.00	9,423.00	9,423.00	9,423.00	4
7	8/31/2012	9,288.00	9,356.00	9,356.00	9,356.00	4
8	8/31/2012	9,221.00	9,288.00	9,288.00	9,288.00	4
9	9/1/2012	9,154.00	9,221.00	9,221.00	9,221.00	4
10	9/1/2012	9,124.00	9,154.00	9,154.00	9,154.00	4
11	9/1/2012	8,974.00	9,124.00	8,989.00	9,111.00	4
12	9/1/2012	8,824.00	8,974.00	8,839.00	8,961.00	4
13	9/2/2012	8,674.00	8,824.00	8,689.00	8,811.00	4
14	9/2/2012	8,524.00	8,674.00	8,539.00	8,661.00	4
15	9/2/2012	8,374.00	8,524.00	8,389.00	8,511.00	4
16	9/2/2012	8,224.00	8,374.00	8,239.00	8,361.00	4
17	9/4/2012	8,026.00	8,224.00	8,089.00	8,211.00	4
17.1	9/4/2012	8,026.00	8,224.00	8,042.00	8,132.00	4
18	9/5/2012	7,876.00	8,026.00	7,891.00	8,013.00	4
19	9/5/2012	7,726.00	7,876.00	7,741.00	7,863.00	4
20	9/5/2012	7,576.00	7,726.00	7,591.00	7,713.00	4
21	9/5/2012	7,426.00	7,576.00	7,441.00	7,563.00	4
22	9/5/2012	7,276.00	7,426.00	7,291.00	7,413.00	4
23	9/6/2012	NA	7,276.00	7,141.00	7,263.00	4

17.06035

512496 - Stimulated Stages								
Zone/Stage	P Break (psi)	Avg Treat Pressure (psi)	Avg rate (bbl/min)	ISIP (psi)	15 Min. SIP (psi)	Fluid Volume (bbl)	Date	Proppant (lb)
1	8,930.00	5,646.00	30.4	4,685.00	2,228.00	2,846	8/24/2012	80,300
2	9,477.00	5,785.00	30.1	4,744.00	2,224.00	2,648	8/25/2012	83,000
3	6,771.00	5,618.00	30.5	NA	NA	2,517	8/25/2012	81,700
4	9,525.00	6,839.00	29.1	9,657.00	NA	2,275	8/25/2012	83,200
5	9,471.00	6,995.00	32.7	4,992.00	NA	2,516	8/30/2012	73,300
6	9,536.00	6,009.00	32.9	5,200.00	NA	2,308	8/31/2012	91,600
7	9,575.00	5,595.00	33.3	4,647.00	NA	2,125	8/31/2012	85,200
8	9,322.00	6,982.00	28.0	4,310.00	NA	1,000	8/31/2012	36,700
9	8,695.00	7,664.00	32.6	4,963.00	NA	3,608	9/1/2012	40,600
10	9,618.00	7,359.00	33.6	5,030.00	NA	2,051	9/1/2012	44,800
11	5,686.00	7,692.00	94.8	4,970.00	2,812.00	5,418	9/1/2012	203,700
12	6,186.00	7,006.00	92.4	5,449.00	3,176.00	5,147	9/2/2012	200,700
13	5,774.00	7,237.00	99.7	5,449.00	2,927.00	5,177	9/2/2012	191,800
14	6,685.00	6,965.00	98.7	4,836.00	2,906.00	5,162	9/2/2012	207,400
15	6,234.00	6,907.00	99.4	4,368.00	2,703.00	4,368	9/2/2012	203,000
16	6,207.00	6,885.00	98.0	4,689.00	2,634.00	5,142	9/4/2012	201,200
17	7,331.00	8,618.00	66.1	NA	NA	3,684	9/4/2012	2,200
17.1	5,390.00	7,523.00	100.5	4,586.00	3,116.00	5,392	9/4/2012	206,300
18	6,442.00	7,027.00	100.4	4,255.00	2,653.00	5,120	9/5/2012	204,200
19	6,485.00	7,029.00	95.9	4,959.00	2,940.00	5,013	9/5/2012	201,100
20	5,604.00	7,795.00	90.6	4,825.00	2,584.00	5,331	9/5/2012	167,700
21	5,213.00	7,661.00	95.3	4,242.00	2,546.00	5,153	9/5/2012	200,500
22	5,609.00	7,276.00	88.8	4,675.00	2,641.00	4,940	9/5/2012	196,500
23	6,477.00	7,205.00	96.1	3,291.00	2,396.00	5,011	9/6/2012	208,300

17-06035

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: 12/7/2013
API #: 47-017-06187

Farm name: Davis, Jonathan Operator Well No.: Dotson Unit 1H

LOCATION: Elevation: 1,146' Quadrangle: West Union 7.5'

District: Central County: Doddridge
Latitude: 10,566' Feet South of 39 Deg. 20 Min. 00 Sec.
Longitude 12,386' Feet West of 80 Deg. 47 Min. 30 Sec.

Company: Antero Resources Corporation

Address: 1625 17th Street	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Denver, CO 80202	20" 94#	67'	67'	64 Cu Ft. Class A
Agent: CT Corporation System	13 3/8" 48#	460'	460'	639 Cu Ft. Class A
Inspector: Douglas Newlon	9 5/8" 36#	2,622'	2,622'	1068 Cu Ft. Class A
Date Permit Issued: 2/22/2013	5 1/2" 20#	13,521'	13,521'	3273 Cu Ft. Class H
Date Well Work Commenced: 3/5/2013				
Date Well Work Completed: 7/9/2013	2 3/8" 4.7#	6879'		
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 6813' TVD				
Total Measured Depth (ft): 13,521' MD				
Fresh Water Depth (ft.): 200'				
Salt Water Depth (ft.): 700'				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): 824'				
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) 6661' (TOP)
Gas: Initial open flow ---- MCF/d Oil: Initial open flow ---- Bbl/d
Final open flow 6,730 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
FEB 12 2014
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 Buck
Signature

2/10/2014
Date

17-06187

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 Yes - CBL

This is a subsequent well. Antero only runs wireline logs on the first well on a multi-well pad (Valentine Unit 1H API# 47-017-06083). Please reference the wireline logs submitted with Form WR-35 for Valentine Unit 1H.

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: 6,910'-13,466' (2,460 Holes)

Frac'd w/ 21,168 gals 15% HCL Acid, 188,084 bbls Slick Water carrying 472,060# 100 mesh,

3,425,656# 40/70 sand and 2,292,160# 20/40 sand.

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

Formations Encountered: Surface:	Top Depth	/	Bottom Depth
Big Lime	est. 2066'		2176'
Big Injun	est. 2177'		2574'
Gantz Sand	est. 2575'		2717'
Fifty Foot Sandstone	est. 2718'		2808'
Gordon	est. 2809'		3122'
Fifth Sandstone	est. 3123'		3147'
Bayard	est. 3148'		3911'
Speechley	est. 3912'		4176'
Baltown	est. 4177'		4632'
Bradford	est. 4633'		5063'
Benson	est. 5064'		5324'
Alexander	est. 5325'		5507'
Elk	est. 5508'		5998'
Rhinestreet	est. 5999'		6300'
Sycamore	6301'		6470'
Middlesex	6471'		6592'
Burkett	6593'		6622'
Tully	6623'		6651'
Hamilton	6652'		6660'
Marcellus	6661'		6813' TVD

17-06187

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/30/2013
Job End Date:	7/9/2013
State:	West Virginia
County:	Doddridge
API Number:	47-017-06187-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Dotson Unit 1H
Longitude:	-80.82900280
Latitude:	39.29932780
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,814
Total Base Water Volume (gal):	7,899,528
Total Base Non Water Volume:	311,488

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Interstate Oil & Gas Compact Commission

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	Base Fluid					
			Water	7732-18-5	100.00000	91.13810	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	8.56278	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.10674	
			Hydrogen Chloride	7641-01-1	18.00000	0.02550	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.03419	
			Petroleum Distillates	64742-47-8	60.00000	0.03238	
			Suspending agent (solid)	14808-60-7	3.00000	0.00523	
			Surfactant	68439-51-0	3.00000	0.00205	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			Anionic Polyacrylamide	Proprietary	40.00000	0.02366	
			Water	7732-18-5	40.00000	0.02366	
			Petroleum Distillates	64742-47-8	40.00000	0.01905	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00296	

17-06187

			Crystalline Salt	12125-02-9	5.00000	0.00296	
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00705	
			Deionized Water	7732-18-5	28.00000	0.00403	
SI-1000	U.S. Well Services, LLC	Scale Inhibitor					
			Anionic Copolymer	Proprietary		0.00318	
			Ethylene Glycol	107-21-1	20.00000	0.00287	
			Water	7732-18-5	30.00000	0.00239	
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.00028	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00009	
			Cinnamaldehyde	104-55-2	15.00000	0.00008	
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00007	
			2-Butoxyethanol	111-76-2	15.00000	0.00007	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nolylphenyl)-omega-hydroxy, branched	127087-87-0	5.00000	0.00003	
			1-Decanol	112-30-1	5.00000	0.00002	
			1-Octanol	111-87-5	3.00000	0.00001	
			Isopropyl Alcohol	67-63-0	2.50000	0.00001	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00059	

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.

* 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)