

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

API 47 - 017 - 06470 County Doddridge District Greenbrier  
Quad New Milton 7.5' Pad Name Trent Pad Field/Pool Name ---  
Farm name Trent, Clarence, Jr., et al Well Number Life Unit 1H  
Operator (as registered with the OOG) Antero Resources Corportion  
Address 1615 Wynkoop St. City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4340083m Easting 532023m  
Landing Point of Curve Northing 4340280.71m Easting 531919.43m  
Bottom Hole Northing 4343172m Easting 530992m

Elevation (ft) 1409' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
Air- Foam & 4% KCL  
Mud- Polymer

Date permit issued 3/19/2014 Date drilling commenced 5/2/2014 Date drilling ceased 8/16/2014  
Date completion activities began 11/19/2014 Date completion activities ceased 3/20/2015  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by Office of Oil and Gas

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 77', 112' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

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Reviewed by:  
JK  
10/23/2015

API 47-017 - 06470 Farm name Trent, Clarence, Jr., et al Well number Life Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	20"	40'	New	133# J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	365'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2549'	New	36# K-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	17840'	New	23# P-110	N/A	Y
Tubing		2-3/8"	7523'		4.7# N-80	N/A	
Packer type and depth set		N/A					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	442 sx	15.6	1.18	254	0'	8 Hrs.
Coal							
Intermediate 1	Class A	994 sx	15.6	1.18	798	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1180 sx (Lead) 1569 sx (Tail)	14.5 Lead 15.2 Tail	1.3 Lead 1.86 Tail	3618	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17840' MD, 7437' TVD (BHL); 7481' TVD (Deepest point drilled) Loggers TD (ft) 17840'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6911'

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Bowen Unit 2H API #47-017-06167). Please reference the wireline logs submitted with Form WR-35 for Bowen Unit 2H. A Cement Bond Log has been included with this submittal.

Check all wireline logs run  caliper  density  deviated/directional  induction  neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No  Conventional  Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

Conductor- 0  
 Surface- 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface  
 Intermediate- 1 above float joint, 1 above float collar, 1 every 4th joint to surface  
 Production- 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

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API 47- 017 - 06470 Farm name Trent, Clarence, Jr., et al Well number Life Unit 1H

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>*PLEASE SEE ATTACHED EXHIBIT 1</b>					

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								

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WV Department of  
Environmental Protection

API 47- 017 - 06470 Farm name Trent, Clarence, Jr., et al Well number Life Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	7404 (TOP)	TVD	7598' (TOP) MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface 3950 psi Bottom Hole --- psi DURATION OF TEST --- hrs  
 OPEN FLOW Gas 9324 mcfpd Oil 3 bpd NGL --- bpd Water 2 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

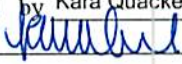
LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

**\*PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP  
 Address 2640 Reach Rd. City Williamsport State PA Zip 17701  
 Logging Company STRC  
 Address 1560 Good Hope Pike City Clarksburg State WV Zip 26301  
 Cementing Company Nabors Completion & Production Services, Co.  
 Address 1650 Hackers Creek City Jane Lew State WV Zip 26378  
 Stimulating Company US Well Services  
 Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233  
 Signature  Title Permit Representative Date 8/10/2015

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry



## EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	19-Nov-14	17,581	17,749	60	Marcellus
2	4-Jan-15	17,382	17,550	60	Marcellus
3	4-Jan-15	17,183	17,351	60	Marcellus
4	5-Jan-15	16,984	17,152	60	Marcellus
5	5-Jan-15	16,785	16,953	60	Marcellus
6	5-Jan-15	16,586	16,754	60	Marcellus
7	6-Jan-15	16,388	16,555	60	Marcellus
8	6-Jan-15	16,189	16,356	60	Marcellus
9	6-Jan-15	15,990	16,158	60	Marcellus
10	9-Jan-15	15,791	15,959	60	Marcellus
11	11-Jan-15	15,592	15,760	60	Marcellus
12	11-Jan-15	15,393	15,561	60	Marcellus
13	11-Jan-15	15,194	15,362	60	Marcellus
14	12-Jan-15	14,995	15,163	60	Marcellus
15	12-Jan-15	14,797	14,964	60	Marcellus
16	12-Jan-15	14,598	14,765	60	Marcellus
17	13-Jan-15	14,399	14,566	60	Marcellus
18	13-Jan-15	14,200	14,368	60	Marcellus
19	14-Jan-15	14,001	14,169	60	Marcellus
20	14-Jan-15	13,802	13,970	60	Marcellus
21	14-Jan-15	13,603	13,771	60	Marcellus
22	3-Feb-15	13,404	13,572	60	Marcellus
23	3-Feb-15	13,205	13,373	60	Marcellus
24	4-Feb-15	13,007	13,174	60	Marcellus
25	4-Feb-15	12,808	12,975	60	Marcellus
26	5-Feb-15	12,609	12,777	60	Marcellus
27	5-Feb-15	12,410	12,578	60	Marcellus
28	5-Feb-15	12,211	12,379	60	Marcellus
29	5-Feb-15	12,012	12,180	60	Marcellus
30	6-Feb-15	11,813	11,981	60	Marcellus
31	7-Feb-15	11,614	11,782	60	Marcellus
32	7-Feb-15	11,416	11,583	60	Marcellus
33	7-Feb-15	11,217	11,384	60	Marcellus
34	8-Feb-15	11,018	11,185	60	Marcellus
35	8-Feb-15	10,819	10,987	60	Marcellus
36	8-Feb-15	10,620	10,788	60	Marcellus
37	8-Feb-15	10,421	10,589	60	Marcellus
38	9-Feb-15	10,222	10,390	60	Marcellus
39	9-Feb-15	10,023	10,191	60	Marcellus
40	9-Feb-15	9,824	9,992	60	Marcellus
41	9-Feb-15	9,626	9,793	60	Marcellus
42	9-Feb-15	9,427	9,594	60	Marcellus
43	10-Feb-15	9,228	9,396	60	Marcellus
44	10-Feb-15	9,029	9,197	60	Marcellus
45	10-Feb-15	8,830	8,998	60	Marcellus
46	10-Feb-15	8,631	8,799	60	Marcellus
47	11-Feb-15	8,432	8,600	60	Marcellus
48	11-Feb-15	8,233	8,401	60	Marcellus
49	11-Feb-15	8,035	8,202	60	Marcellus
50	11-Feb-15	7,836	8,003	60	Marcellus
51	12-Feb-15	7,637	7,804	60	Marcellus

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10/23/2015

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	3-Jan-15	58.4	7,580	6,680	4,406	221,890	7,008	N/A
2	4-Jan-15	54.0	7,838	6,523	5,507	115,750	6,798	N/A
3	4-Jan-15	63.0	7,624	6,216	5,103	174,500	7,241	N/A
4	5-Jan-15	58.4	7,706	5,876	4,753	159,720	6,947	N/A
5	5-Jan-15	59.6	7,399	5,243	5,447	239,820	6,625	N/A
6	5-Jan-15	64.3	7,505	6,144	5,507	217,575	7,229	N/A
7	6-Jan-15	61.5	7,282	5,677	5,021	237,950	6,553	N/A
8	6-Jan-15	63.9	7,440	5,733	6,194	236,090	6,525	N/A
9	6-Jan-15	64.7	7,516	5,836	5,243	241,560	6,683	N/A
10	9-Jan-15	56.1	7,321	5,686	4,835	241,620	6,582	N/A
11	11-Jan-15	61.2	7,360	5,786	4,466	239,160	6,486	N/A
12	11-Jan-15	65.2	7,301	5,504	5,051	241,890	6,466	N/A
13	11-Jan-15	65.0	7,340	5,572	5,393	243,000	6,461	N/A
14	12-Jan-15	66.0	7,195	5,543	5,175	243,100	6,483	N/A
15	12-Jan-15	62.0	7,231	5,761	4,896	242,220	6,500	N/A
16	12-Jan-15	64.0	7,262	5,697	5,153	242,660	6,402	N/A
17	13-Jan-15	63.0	7,637	5,877	5,161	244,750	6,430	N/A
18	13-Jan-15	64.6	7,324	5,783	5,629	243,850	6,374	N/A
19	14-Jan-15	64.6	7,383	5,733	5,286	216,925	6,954	N/A
20	14-Jan-15	65.7	7,249	5,819	5,676	241,400	6,303	N/A
21	14-Jan-15	63.1	7,206	5,647	5,482	242,500	6,321	N/A
22	3-Feb-15	62.0	7,279	N/A	5,010	244,750	6,459	N/A
23	3-Feb-15	61.0	7,167	5,937	4,892	244,550	6,367	N/A
24	4-Feb-15	60.1	7,109	5,397	5,461	244,500	6,320	N/A
25	4-Feb-15	62.2	7,128	5,479	6,487	243,980	6,542	N/A
26	5-Feb-15	63.0	6,946	5,486	5,479	242,500	6,238	N/A
27	5-Feb-15	63.1	6,997	5,493	6,956	244,040	6,219	N/A
28	5-Feb-15	64.2	7,021	5,440	6,280	243,970	6,201	N/A
29	5-Feb-15	65.0	7,040	5,693	5,350	242,100	6,184	N/A
30	6-Feb-15	64.0	7,155	5,511	4,735	243,420	6,716	N/A
31	7-Feb-15	62.9	6,823	5,275	6,645	244,105	6,235	N/A
32	7-Feb-15	63.1	6,746	5,393	6,073	243,550	6,155	N/A
33	7-Feb-15	64.0	6,906	5,325	5,586	243,150	6,115	N/A
34	8-Feb-15	65.0	6,803	5,590	5,883	244,920	6,102	N/A
35	8-Feb-15	64.2	6,786	5,525	6,455	243,675	6,086	N/A
36	8-Feb-15	62.3	6,782	5,465	6,359	236,550	6,046	N/A
37	8-Feb-15	64.0	6,759	5,408	5,759	244,020	6,047	N/A
38	9-Feb-15	65.0	6,600	5,375	5,744	243,920	6,033	N/A
39	9-Feb-15	64.6	6,683	5,300	5,318	243,360	6,025	N/A
40	9-Feb-15	63.5	6,871	5,672	5,100	243,570	6,001	N/A
41	9-Feb-15	63.0	6,727	5,447	5,701	190,190	6,137	N/A
42	9-Feb-15	64.0	6,765	5,665	5,940	243,550	6,032	N/A
43	10-Feb-15	64.3	6,957	5,565	4,953	244,610	6,371	N/A
44	10-Feb-15	63.2	6,714	5,389	5,114	244,050	5,934	N/A
45	10-Feb-15	64.0	6,678	5,366	5,883	243,820	5,925	N/A
46	10-Feb-15	64.0	6,689	5,475	5,633	207,820	5,680	N/A
47	11-Feb-15	64.0	6,829	5,364	4,710	242,190	5,988	N/A
48	11-Feb-15	64.2	6,881	5,554	5,243	243,580	5,882	N/A
49	11-Feb-15	64.6	6,975	5,525	5,440	245,880	5,844	N/A
50	11-Feb-15	65.0	6,678	5,547	6,248	237,720	6,032	N/A
51	12-Feb-15	65.0	6,677	5,465	5,915	242,635	6,035	N/A
AVG=		63.1	7,095	5,629	5,485	11,938,375	323,425	TOTAL

Office of Oil & Gas  
 Division of Oil & Gas  
 11/15/14

Department of Energy & Environmental Protection

## EXHIBIT 3

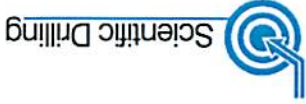
LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	77'	N/A	77'	N/A
Fresh Water	112'	N/A	112'	N/A
Sandstone	0	77	0	77
Shale	est. 77	632	est. 77	632
Sandstone	est. 632	697	est. 632	697
Shale and Limestone	est. 697	877	est. 697	877
Sandstone	est. 877	907	est. 877	907
Shale	est. 907	1037	est. 907	1037
Sandstone and Coal	est. 1037	1087	est. 1037	1087
Shale	est. 1087	1237	est. 1087	1237
Sandstone	est. 1237	1267	est. 1237	1267
Shale	est. 1267	1767	est. 1267	1767
Sandstone	est. 1767	1897	est. 1767	1897
Shale	est. 1897	1957	est. 1897	1957
Sandstone and Coal	est. 1957	1987	est. 1957	1987
Shale	est. 1987	2077	est. 1987	2077
Sandstone	est. 2077	2147	est. 2077	2147
Shale	est. 2147	2439	est. 2147	2442
Big Lime	2439	2567	2442	2570
Big Injun	2567	2805	2570	2808
Gantz Sand	2805	2885	2808	2888
Fifty Foot Sandstone	2885	3098	2888	3101
Gordon	3098	3386	3101	3389
Fifth Sandstone	3386	3449	3389	3452
Bayard	3449	3786	3452	3789
Warren	3786	4106	3789	4109
Speechley	4106	4284	4109	4287
Baltown	4284	4863	4287	4866
Bradford	4863	5409	4866	5412
Benson	5409	5664	5412	5667
Alexander	5664	5897	5667	5900
Elk	5897	6383	5900	6386
Rhinestreet	6383	6938	6386	6941
Sycamore	6938	7105	6941	7115
Middlesex	7105	7256	7115	7300
Burkett	7256	7286	7300	7342
Tully	7286	7404	7342	7598
Marcellus	7404	NA	7598	NA

\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

06499017

Azimuths to Grid North  
 True North: -0.23°  
 Magnetic North: -8.75°  
 Strength: 52.62  $\mu$ T  
 Dip Angle: 66.75°  
 Date: 3/20/2014  
 Model: IGRF2010

To convert True North to Grid, Subtract 8.75°



**Life Unit 1H**  
 Doddridge County WV  
 Northing: 14238375.65  
 Easting: 1745432.85  
 As Drilled



**WELL DETAILS** Life Unit 1H

N/S	+E/W	0.0	14238375.65	1745432.85	39° 12' 33.651" N	80° 37' 45.340" W
Ground Level:	1407.0					
Latitude	Longitude					

**SITE DETAILS:** Trent Pad: Bowen/Cox/Life/Baker/Leester

Site Center:	Cox Unit 2H
Site Centre Northing:	14238320.29
Easting:	1745410.61
Positional Uncertainty:	0.0
Convergence:	0.23
Local North:	GND

**PROJECT DETAILS:** Doddridge County WV

Geodetic System:	Universal Transverse Mercator (US Survey)
Datum:	NAD 1983 (NAD83 CONUS)
Epoch:	Dark 1995
Zone:	17N (84 W to 78 W)
System Datum:	Mean Sea Level

**Scientific Drilling**

421 South Eagle Lane
Oklahoma City, OK 73126
Genie Lightfoot
SS, August 15 2014

**LEGEND**

- Blue arrow: Baker Unit 1H, Original Wellpath, As Drilled V0
- Orange arrow: Cox Unit 2H, Original Wellpath, As Drilled V0
- Blue square: Cox Unit 1H, Original Wellpath, As Drilled V0
- Blue diamond: Nestor Unit 1H, Original Wellpath, As Drilled V0
- Blue circle: Life Unit 1H, Original Wellpath, Plan 5 V0
- Blue inverted triangle: Bowen Unit 1H, Original Wellpath, As Drilled V0
- Pink inverted triangle: Baker Unit 2H, Original Wellpath, As Drilled V0
- Blue square: Life Unit 2H, Original Wellpath, As Drilled V0
- Blue X: Bowen Unit 2H, Original Wellpath, As Drilled V0
- Red arrow: As Drilled

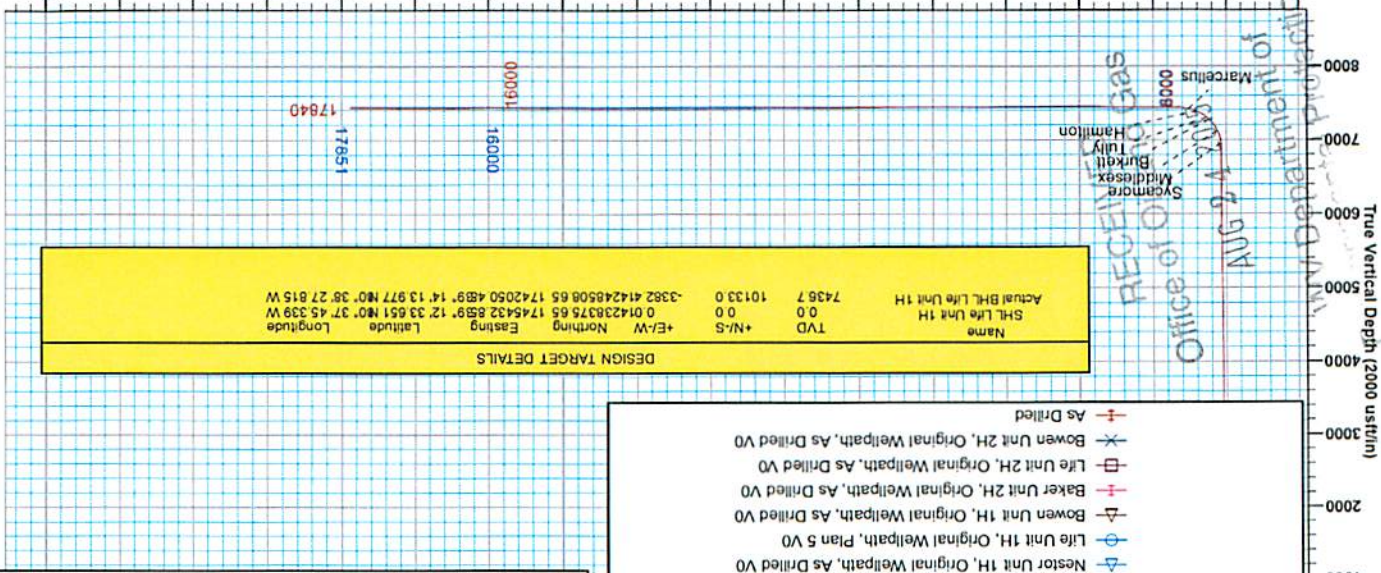
**DESIGN TARGET DETAILS**

Name	TVD	+N/S	+E/W	Northing	Easting
SHL Life Unit 1H	0.0	0.0	0.0	14238375.65	1745432.85
Actual BHL Life Unit 1H	7436.7	10133.0	-3382.4	14248508.65	1742050.48

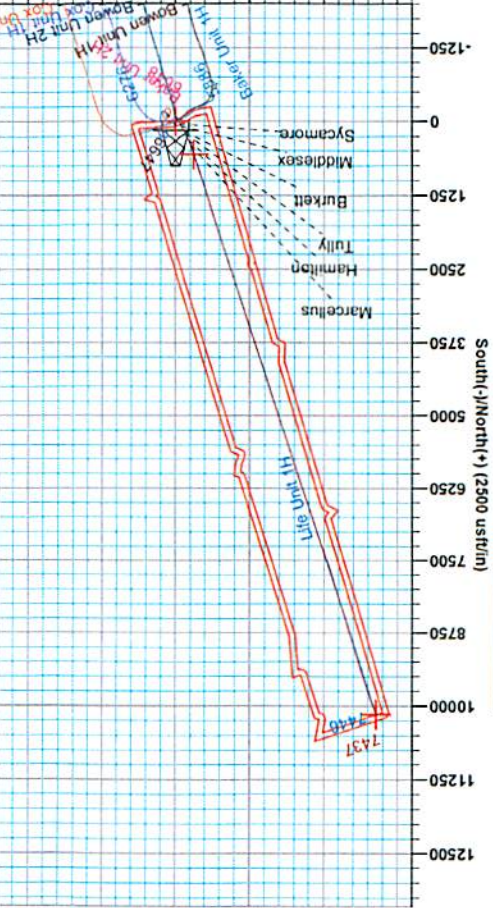
**DESIGN TARGET DETAILS**

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Life Unit 1H	0.0	0.0	0.0	014238375.65	1745432.85	12° 33.651' N	80° 37' 45.339" W
Actual BHL Life Unit 1H	7436.7	10133.0	-3382.4	14248508.65	1742050.48	14° 13.977' N	80° 38' 27.815" W

Vertical Section at 342.20° (1800 usft/in)



West-/East(+) (2500 usft/in)



Office of Oil & Gas  
 RECEIVED  
 AUG 24 2015  
 WV Department of Environmental Protection  
 Marcellus  
 Hamilton  
 Middlesex  
 Sycamore  
 Burkett  
 Tully  
 Baker Unit 1H  
 Baker Unit 2H  
 Cox Unit 1H  
 Cox Unit 2H  
 Bowen Unit 1H  
 Bowen Unit 2H



17-06470



## Antero Resources

Doddridge County WV  
Trent Pad: Bowen/Cox/Life/Baker/Nestor  
Life Unit 1H  
Original Wellpath

Design: As Drilled

## EOW Completion Report

14 August, 2014



10/23/2015

17-06470



EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Life Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Site:</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor	<b>MD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Well:</b>	Life Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

<b>Project</b>	Doddridge County WV, McClellan District		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)		

<b>Site</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor				
<b>Site Position:</b>	<b>Northing:</b>	14,238,330.29 usft	<b>Latitude:</b>	39° 12' 33.204 N	
<b>From: Map</b>	<b>Easting:</b>	1,745,410.61 usft	<b>Longitude:</b>	80° 37' 45.625 W	
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.23 °

<b>Well</b>	Life Unit 1H, Marcellus					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,238,375.65 usft	<b>Latitude:</b>	39° 12' 33.651 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,745,432.85 usft	<b>Longitude:</b>	80° 37' 45.340 W
<b>Position Uncertainty</b>	2.0 usft	<b>Wellhead Elevation:</b>	1,426.0 usft	<b>Ground Level:</b>	1,407.0 usft	

<b>Wellbore</b>	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/20/2014	-8.55	66.75	52,263

<b>Design</b>	As Drilled				
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<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	342.20	

<b>Survey Program</b>	Date 8/14/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
106.0	6,623.6	Survey #4 Def Gyro to KOP (Original Well)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,647.0	17,840.0	Survey #5 MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
106.0	0.14	214.60	106.0	-0.1	-0.1	-0.1	0.13
206.0	0.16	211.79	206.0	-0.3	-0.2	-0.2	0.02
306.0	0.13	180.97	306.0	-0.6	-0.3	-0.4	0.08
406.0	2.38	268.74	406.0	-0.7	-2.4	0.0	2.38
506.0	4.81	276.09	505.8	-0.3	-8.6	2.3	2.47
606.0	5.67	284.15	605.3	1.3	-17.6	6.6	1.13
706.0	5.84	284.87	704.8	3.8	-27.3	12.0	0.18
806.0	5.65	288.01	804.3	6.7	-36.9	17.6	0.37
906.0	5.58	289.85	903.9	9.8	-46.3	23.5	0.19
1,006.0	5.14	292.56	1,003.4	13.2	-54.8	29.4	0.51

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Life Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Site:</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor	<b>MD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Well:</b>	Life Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,106.0	3.62	306.08	1,103.1	16.8	-61.5	34.8	1.83
1,206.0	3.12	307.11	1,203.0	20.3	-66.3	39.6	0.50
1,306.0	2.19	308.01	1,302.9	23.1	-69.9	43.4	0.93
1,406.0	1.67	311.77	1,402.8	25.3	-72.5	46.2	0.53
1,506.0	1.08	307.83	1,502.8	26.8	-74.4	48.3	0.60
1,606.0	0.57	318.56	1,602.8	27.8	-75.4	49.5	0.53
1,706.0	0.34	346.30	1,702.8	28.4	-75.8	50.2	0.31
1,806.0	0.19	46.46	1,802.8	28.8	-75.8	50.6	0.30
1,906.0	0.26	92.64	1,902.8	28.9	-75.4	50.6	0.19
2,006.0	0.38	91.29	2,002.7	28.9	-74.9	50.4	0.12
2,106.0	0.55	128.18	2,102.7	28.6	-74.2	49.9	0.34
2,206.0	0.58	132.86	2,202.7	28.0	-73.4	49.1	0.06
2,306.0	0.43	132.58	2,302.7	27.4	-72.8	48.3	0.15
2,406.0	0.42	151.61	2,402.7	26.8	-72.3	47.6	0.14
2,506.0	0.33	115.15	2,502.7	26.3	-71.9	47.1	0.25
2,606.0	0.29	126.47	2,602.7	26.1	-71.4	46.7	0.07
2,706.0	0.21	150.66	2,702.7	25.8	-71.1	46.3	0.13
2,806.0	0.13	173.85	2,802.7	25.5	-71.0	46.0	0.10
2,906.0	0.27	245.45	2,902.7	25.3	-71.2	45.8	0.26
3,006.0	0.21	235.10	3,002.7	25.1	-71.6	45.8	0.07
3,106.0	0.23	197.75	3,102.7	24.8	-71.8	45.5	0.14
3,206.0	0.34	257.28	3,202.7	24.5	-72.2	45.4	0.30
3,306.0	0.08	134.44	3,302.7	24.4	-72.4	45.4	0.39
3,406.0	0.15	197.23	3,402.7	24.2	-72.4	45.2	0.13
3,506.0	0.09	286.03	3,502.7	24.1	-72.5	45.1	0.17
3,606.0	0.10	342.32	3,602.7	24.2	-72.6	45.3	0.09
3,706.0	0.03	150.29	3,702.7	24.3	-72.6	45.3	0.13
3,806.0	0.17	280.68	3,802.7	24.3	-72.7	45.4	0.19
3,906.0	0.16	33.69	3,902.7	24.4	-72.8	45.5	0.28
4,006.0	0.06	271.59	4,002.7	24.6	-72.8	45.6	0.20
4,106.0	0.15	300.28	4,102.7	24.6	-73.0	45.8	0.10
4,206.0	0.07	163.53	4,202.7	24.6	-73.0	45.8	0.21
4,306.0	0.21	310.21	4,302.7	24.7	-73.2	45.9	0.27
4,406.0	0.20	13.74	4,402.7	25.0	-73.3	46.2	0.22
4,506.0	0.24	27.63	4,502.7	25.3	-73.1	46.5	0.07
4,606.0	0.30	27.50	4,602.7	25.8	-72.9	46.8	0.06
4,706.0	0.41	22.54	4,702.7	26.3	-72.7	47.3	0.11
4,806.0	0.50	5.31	4,802.7	27.1	-72.5	47.9	0.16
4,906.0	0.49	347.97	4,902.7	27.9	-72.5	48.8	0.15
5,006.0	0.56	342.51	5,002.7	28.8	-72.8	49.7	0.09
5,106.0	0.66	347.09	5,102.7	29.9	-73.0	50.8	0.11
5,206.0	0.72	358.14	5,202.7	31.0	-73.2	51.9	0.15
5,306.0	0.65	357.11	5,302.7	32.2	-73.2	53.1	0.07
5,406.0	0.77	354.61	5,402.7	33.5	-73.3	54.3	0.12

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Life Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Site:</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor	<b>MD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Well:</b>	Life Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,506.0	0.93	357.56	5,502.7	35.0	-73.4	55.7	0.17
5,606.0	0.81	354.10	5,602.7	36.5	-73.5	57.2	0.13
5,706.0	0.95	348.75	5,702.6	38.0	-73.8	58.7	0.16
5,806.0	0.91	350.09	5,802.6	39.6	-74.1	60.3	0.05
5,906.0	0.93	346.93	5,902.6	41.2	-74.4	61.9	0.05
6,006.0	0.72	341.48	6,002.6	42.5	-74.8	63.4	0.22
6,106.0	0.62	346.97	6,102.6	43.7	-75.1	64.5	0.12
6,206.0	0.46	329.82	6,202.6	44.5	-75.4	65.5	0.23
6,306.0	0.31	9.49	6,302.6	45.1	-75.6	66.1	0.30
6,406.0	0.28	51.62	6,402.6	45.6	-75.3	66.4	0.21
6,506.0	0.13	59.95	6,502.6	45.8	-75.0	66.5	0.15
6,606.0	0.16	131.94	6,602.6	45.7	-74.8	66.4	0.17
6,623.6	0.16	135.43	6,620.2	45.7	-74.8	66.4	0.06
6,647.0	0.27	102.95	6,643.6	45.7	-74.7	66.3	0.68
6,687.0	0.24	81.20	6,683.6	45.7	-74.6	66.3	0.25
6,732.0	0.55	101.99	6,728.6	45.6	-74.3	66.1	0.75
6,777.0	0.61	113.74	6,773.6	45.5	-73.8	65.9	0.30
6,822.0	0.72	111.49	6,818.6	45.3	-73.3	65.5	0.25
6,866.0	0.78	123.39	6,862.6	45.0	-72.8	65.1	0.38
6,911.0	0.87	125.35	6,907.6	44.7	-72.3	64.6	0.21
6,956.0	3.77	327.36	6,952.6	45.7	-72.8	65.8	10.20
6,960.0	4.26	327.23	6,956.5	45.9	-73.0	66.0	12.13
<b>Sycamore</b>							
7,001.0	9.23	326.68	6,997.2	50.0	-75.6	70.7	12.13
7,046.0	14.87	327.23	7,041.2	57.8	-80.7	79.8	12.54
7,090.0	20.34	326.80	7,083.2	69.0	-88.0	92.6	12.44
7,134.0	25.51	327.55	7,123.7	83.4	-97.2	109.1	11.77
<b>Middlesex</b>							
7,135.0	25.63	327.56	7,124.6	83.8	-97.5	109.6	11.77
7,180.0	30.54	329.19	7,164.3	101.8	-108.6	130.1	11.04
7,225.0	34.41	330.16	7,202.2	122.7	-120.7	153.7	8.68
7,270.0	38.46	330.43	7,238.4	145.9	-134.0	179.9	9.01
7,315.0	42.92	332.06	7,272.5	171.6	-148.1	208.7	10.19
7,319.0	43.35	332.19	7,275.4	174.0	-149.3	211.3	11.08
<b>Burkett</b>							
7,360.0	47.81	333.42	7,304.1	200.1	-162.7	240.2	11.08
7,361.0	47.93	333.43	7,304.8	200.7	-163.0	241.0	12.07
<b>Tully</b>							
7,404.0	53.10	334.01	7,332.1	230.5	-177.7	273.8	12.07
7,449.0	58.19	334.24	7,357.5	263.9	-193.9	310.5	11.32
7,494.0	62.73	335.96	7,379.7	299.4	-210.4	349.4	10.62
7,509.0	64.45	336.16	7,386.4	311.7	-215.9	362.7	11.53
<b>Hamilton</b>							
7,539.0	67.89	336.54	7,398.5	336.8	-226.9	390.0	11.53
7,584.0	72.20	337.38	7,413.9	375.7	-243.4	432.2	9.74

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Life Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Site:</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor	<b>MD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Well:</b>	Life Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,617.0	75.29	337.94	7,423.1	405.0	-255.4	463.7	9.52
<b>Marcellus</b>							
7,629.0	76.42	338.14	7,426.0	415.8	-259.8	475.3	9.52
7,674.0	79.70	339.39	7,435.3	456.9	-275.7	519.3	7.78
7,719.0	84.20	339.40	7,441.6	498.5	-291.4	563.8	10.00
7,785.0	89.53	341.34	7,445.2	560.6	-313.5	629.6	8.59
7,875.0	90.47	342.28	7,445.2	646.1	-341.6	719.6	1.48
7,964.0	90.44	341.56	7,444.5	730.7	-369.3	808.6	0.81
8,054.0	90.34	341.15	7,443.9	816.0	-398.0	898.6	0.47
8,143.0	90.07	342.00	7,443.6	900.4	-426.2	987.6	1.00
8,233.0	89.29	342.38	7,444.1	986.1	-453.7	1,077.6	0.96
8,323.0	89.29	342.76	7,445.2	1,072.0	-480.6	1,167.6	0.42
8,412.0	88.15	343.70	7,447.2	1,157.1	-506.3	1,256.5	1.66
8,502.0	87.99	343.01	7,450.2	1,243.3	-532.1	1,346.5	0.79
8,592.0	88.99	343.79	7,452.6	1,329.5	-557.8	1,436.4	1.41
8,681.0	87.75	342.35	7,455.1	1,414.6	-583.7	1,525.4	2.13
8,771.0	88.09	342.19	7,458.4	1,500.3	-611.1	1,615.3	0.42
8,861.0	89.13	342.64	7,460.6	1,586.1	-638.3	1,705.3	1.26
8,950.0	90.07	343.75	7,461.2	1,671.3	-664.0	1,794.3	1.63
9,040.0	90.44	342.65	7,460.8	1,757.4	-690.0	1,884.2	1.29
9,130.0	91.01	341.89	7,459.7	1,843.2	-717.4	1,974.2	1.06
9,219.0	90.24	342.28	7,458.7	1,927.8	-744.8	2,063.2	0.97
9,309.0	90.74	342.47	7,457.9	2,013.6	-772.0	2,153.2	0.59
9,399.0	90.10	342.80	7,457.3	2,099.5	-798.9	2,243.2	0.80
9,488.0	89.73	341.61	7,457.4	2,184.2	-826.1	2,332.2	1.40
9,578.0	89.26	341.40	7,458.2	2,269.6	-854.6	2,422.2	0.57
9,668.0	90.94	341.92	7,458.0	2,355.0	-883.0	2,512.2	1.95
9,757.0	90.17	340.93	7,457.2	2,439.4	-911.3	2,601.2	1.41
9,847.0	89.73	339.88	7,457.3	2,524.2	-941.5	2,691.1	1.26
9,937.0	90.20	341.48	7,457.3	2,609.1	-971.3	2,781.1	1.85
10,026.0	90.47	342.24	7,456.8	2,693.7	-999.0	2,870.1	0.91
10,116.0	91.01	340.90	7,455.6	2,779.0	-1,027.4	2,960.1	1.61
10,206.0	89.80	342.66	7,455.0	2,864.5	-1,055.6	3,050.1	2.37
10,295.0	90.13	342.67	7,455.0	2,949.5	-1,082.1	3,139.1	0.37
10,385.0	90.80	342.32	7,454.3	3,035.3	-1,109.1	3,229.1	0.84
10,475.0	91.35	342.18	7,452.6	3,121.0	-1,136.6	3,319.0	0.63
10,564.0	90.47	343.03	7,451.2	3,205.9	-1,163.2	3,408.0	1.37
10,654.0	90.84	342.34	7,450.2	3,291.8	-1,190.0	3,498.0	0.87
10,743.0	90.40	342.39	7,449.2	3,376.6	-1,216.9	3,587.0	0.50
10,833.0	90.74	342.86	7,448.3	3,462.5	-1,243.8	3,677.0	0.64
10,923.0	91.14	342.28	7,446.9	3,548.4	-1,270.8	3,767.0	0.78
11,013.0	88.79	340.62	7,446.9	3,633.7	-1,299.4	3,857.0	3.20
11,102.0	88.92	341.79	7,448.7	3,717.9	-1,328.1	3,945.9	1.32
11,196.0	90.54	342.13	7,449.1	3,807.3	-1,357.2	4,039.9	1.76
11,289.0	91.01	342.00	7,447.9	3,895.8	-1,385.8	4,132.9	0.52

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Life Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Site:</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor	<b>MD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Well:</b>	Life Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,384.0	90.98	342.17	7,446.2	3,986.2	-1,415.0	4,227.9	0.18
11,478.0	91.99	342.91	7,443.8	4,075.8	-1,443.2	4,321.9	1.33
11,571.0	91.08	342.69	7,441.3	4,164.6	-1,470.7	4,414.8	1.01
11,665.0	91.41	342.59	7,439.2	4,254.3	-1,498.7	4,508.8	0.37
11,759.0	90.57	342.32	7,437.6	4,343.9	-1,527.1	4,602.8	0.94
11,852.0	90.44	342.24	7,436.8	4,432.5	-1,555.4	4,695.8	0.16
11,946.0	89.60	343.01	7,436.8	4,522.2	-1,583.4	4,789.8	1.21
12,040.0	89.97	343.14	7,437.1	4,612.1	-1,610.8	4,883.8	0.42
12,134.0	89.53	342.73	7,437.5	4,702.0	-1,638.4	4,977.8	0.64
12,228.0	90.30	343.04	7,437.7	4,791.8	-1,666.1	5,071.8	0.88
12,318.0	89.06	343.00	7,438.2	4,877.9	-1,692.3	5,161.7	1.38
12,407.0	89.50	342.78	7,439.3	4,963.0	-1,718.5	5,250.7	0.55
12,497.0	90.07	342.73	7,439.6	5,048.9	-1,745.2	5,340.7	0.64
12,587.0	89.36	342.28	7,440.1	5,134.8	-1,772.3	5,430.7	0.93
12,676.0	89.53	341.02	7,440.9	5,219.2	-1,800.3	5,519.7	1.43
12,766.0	90.17	340.65	7,441.2	5,304.2	-1,829.8	5,609.7	0.82
12,856.0	91.21	341.06	7,440.1	5,389.3	-1,859.3	5,699.7	1.24
12,945.0	91.51	339.87	7,438.0	5,473.1	-1,889.1	5,788.6	1.38
13,035.0	92.08	342.12	7,435.2	5,558.1	-1,918.4	5,878.5	2.58
13,125.0	91.48	343.50	7,432.4	5,644.1	-1,945.0	5,968.5	1.67
13,215.0	90.50	342.99	7,430.8	5,730.2	-1,970.9	6,058.4	1.23
13,304.0	90.81	343.73	7,429.8	5,815.5	-1,996.4	6,147.4	0.90
13,394.0	90.40	342.57	7,428.8	5,901.6	-2,022.5	6,237.4	1.37
13,484.0	90.87	342.61	7,427.8	5,987.5	-2,049.4	6,327.4	0.52
13,573.0	90.87	341.68	7,426.5	6,072.2	-2,076.7	6,416.4	1.04
13,663.0	88.69	340.68	7,426.8	6,157.4	-2,105.7	6,506.4	2.66
13,752.0	89.70	341.83	7,428.1	6,241.7	-2,134.3	6,595.3	1.72
13,842.0	90.50	342.36	7,427.9	6,327.3	-2,162.0	6,685.3	1.07
13,932.0	89.36	341.64	7,428.0	6,412.9	-2,189.8	6,775.3	1.50
14,022.0	89.97	342.37	7,428.6	6,498.5	-2,217.6	6,865.3	1.06
14,111.0	90.67	342.80	7,428.1	6,583.4	-2,244.2	6,954.3	0.92
14,201.0	89.23	341.29	7,428.2	6,669.0	-2,272.0	7,044.3	2.32
14,291.0	89.73	340.48	7,429.0	6,754.1	-2,301.5	7,134.3	1.06
14,380.0	89.93	341.02	7,429.2	6,838.1	-2,330.8	7,223.3	0.65
14,470.0	90.44	343.20	7,428.9	6,923.7	-2,358.4	7,313.2	2.49
14,560.0	90.97	342.89	7,427.8	7,009.8	-2,384.7	7,403.2	0.68
14,649.0	90.47	343.43	7,426.7	7,095.0	-2,410.5	7,492.2	0.83
14,739.0	91.17	343.72	7,425.4	7,181.3	-2,435.9	7,582.2	0.84
14,829.0	89.60	341.45	7,424.8	7,267.2	-2,462.8	7,672.2	3.07
14,918.0	87.68	338.07	7,426.9	7,350.6	-2,493.6	7,761.0	4.37
15,008.0	89.36	338.96	7,429.3	7,434.3	-2,526.6	7,850.8	2.11
15,098.0	89.23	340.22	7,430.4	7,518.7	-2,558.0	7,940.7	1.41
15,188.0	89.70	341.88	7,431.2	7,603.8	-2,587.2	8,030.7	1.92
15,277.0	88.76	343.31	7,432.4	7,688.7	-2,613.8	8,119.7	1.92

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17-06470



EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Life Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Site:</b>	Trent Pad: Bowen/Cox/Life/Baker/Nestor	<b>MD Reference:</b>	Precision 525 GL 1407' + 19' RKB @ 1426.0usft
<b>Well:</b>	Life Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
15,367.0	89.80	344.14	7,433.5	7,775.1	-2,639.0	8,209.6	1.48
15,456.0	89.46	343.74	7,434.1	7,860.6	-2,663.6	8,298.6	0.59
15,546.0	90.20	343.69	7,434.4	7,947.0	-2,688.9	8,388.6	0.82
15,635.0	89.36	342.96	7,434.7	8,032.3	-2,714.4	8,477.5	1.25
15,725.0	88.96	343.61	7,436.0	8,118.5	-2,740.3	8,567.5	0.85
15,815.0	89.60	343.51	7,437.2	8,204.8	-2,765.8	8,657.5	0.72
15,904.0	89.60	343.21	7,437.8	8,290.0	-2,791.2	8,746.5	0.34
15,994.0	90.40	343.55	7,437.8	8,376.3	-2,817.0	8,836.4	0.97
16,084.0	89.02	343.32	7,438.2	8,462.5	-2,842.6	8,926.4	1.55
16,173.0	90.27	343.33	7,438.8	8,547.8	-2,868.2	9,015.4	1.40
16,263.0	91.21	342.57	7,437.6	8,633.8	-2,894.6	9,105.4	1.34
16,353.0	90.34	342.16	7,436.4	8,719.6	-2,921.8	9,195.4	1.07
16,442.0	91.14	342.72	7,435.3	8,804.4	-2,948.7	9,284.4	1.10
16,532.0	90.03	343.16	7,434.4	8,890.5	-2,975.1	9,374.3	1.33
16,622.0	90.70	343.27	7,433.8	8,976.6	-3,001.1	9,464.3	0.75
16,711.0	89.29	343.24	7,433.8	9,061.9	-3,026.7	9,553.3	1.58
16,801.0	89.87	343.03	7,434.4	9,148.0	-3,052.8	9,643.3	0.69
16,891.0	90.77	343.34	7,433.9	9,234.1	-3,078.9	9,733.3	1.06
16,980.0	89.56	342.36	7,433.7	9,319.2	-3,105.1	9,822.3	1.75
17,070.0	90.40	343.26	7,433.7	9,405.2	-3,131.7	9,912.3	1.37
17,160.0	89.87	342.40	7,433.5	9,491.1	-3,158.3	10,002.3	1.12
17,249.0	90.40	342.68	7,433.3	9,576.0	-3,185.0	10,091.3	0.67
17,339.0	88.42	341.01	7,434.2	9,661.5	-3,213.0	10,181.2	2.88
17,429.0	89.23	340.28	7,436.1	9,746.4	-3,242.8	10,271.2	1.21
17,519.0	90.13	341.05	7,436.6	9,831.4	-3,272.6	10,361.2	1.32
17,608.0	89.26	340.43	7,437.0	9,915.4	-3,302.0	10,450.1	1.20
17,698.0	90.03	339.61	7,437.6	10,000.0	-3,332.7	10,540.1	1.25
17,783.0	90.50	339.51	7,437.2	10,079.6	-3,362.4	10,625.0	0.57
17,840.0	90.50	339.51	7,436.7	10,133.0	-3,382.4	10,681.9	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,960.0	6,956.5	45.9	-73.0	Sycamore
7,134.0	7,123.7	83.4	-97.2	Middlesex
7,319.0	7,275.4	174.0	-149.3	Burkett
7,361.0	7,304.8	200.7	-163.0	Tully
7,509.0	7,386.4	311.7	-215.9	Hamilton
7,617.0	7,423.1	405.0	-255.4	Marcellus

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Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/3/2015
Job End Date:	2/12/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06470-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Life Unit 1H
Longitude:	-80.62908900
Latitude:	39.20943600
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,461
Total Base Water Volume (gal):	14,601,868
Total Base Non Water Volume:	622,860



17-06470

## 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	90.66483	
Sand	U.S. Well Services	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	8.88811	
HCL Acid (12.6%-18.0%)	U.S. Well Services	Bulk Acid	Water	7732-18-5	87.50000	0.15740	
			Hydrogen Chloride	7647-01-0	18.00000	0.03760	
LGC-15	U.S. Well Services	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.06243	
			Petroleum Distillates	64742-47-8	60.00000	0.05912	
			Suspending agent (solid)	14808-60-7	3.00000	0.00955	
			Surfactant	68439-51-0	3.00000	0.00375	
WFRA-405	U.S. Well Services	Friction Reducer	Water	7732-18-5	40.00000	0.02768	
			Anionic Polyacrylamide	Proprietary	40.00000	0.02768	
			Petroleum Distillates	64742-47-8	40.00000	0.02228	
			Crystalline Salt	12125-02-9	5.00000	0.00346	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00346	
SI-1100	U.S. Well Services	Scale Inhibitor					

On 2/12/2015  
 Office of Environmental Policy  
 24  
 2015  
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 2015



			Di Water	7732-18-5	80.00000	0.00988
			Ethylene Glycol	107-21-1	40.00000	0.00558
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00167
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00159
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00154
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00146
			bis (hexamethylene) tramine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00142
			Acrylic polymer	52255-49-9	5.00000	0.00062
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00423
			Deionized Water	7732-18-5	28.00000	0.00241
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00195
AI-301	U.S. Well Services	Acid Corrosion Inhibitors				
			Diethylene Glycol	111-46-6	30.00000	0.00012
			Methenamine	100-97-0	20.00000	0.00010
			Polyethylene polyamine	68603-67-8	10.00000	0.00004
			Hydrogen Chloride	7647-01-0	10.00000	0.00004
			Coco amine	61791-14-8	5.00000	0.00002

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)

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LATITUDE 39°15'00" 1,209'

LATITUDE 39°15'00" LONGITUDE 80°37'30"

LONGITUDE 80°37'30"

4,658' TO BOTTOM HOLE

14,808'

LONGITUDE 80°37'30"

COUNTY NAME PERMIT

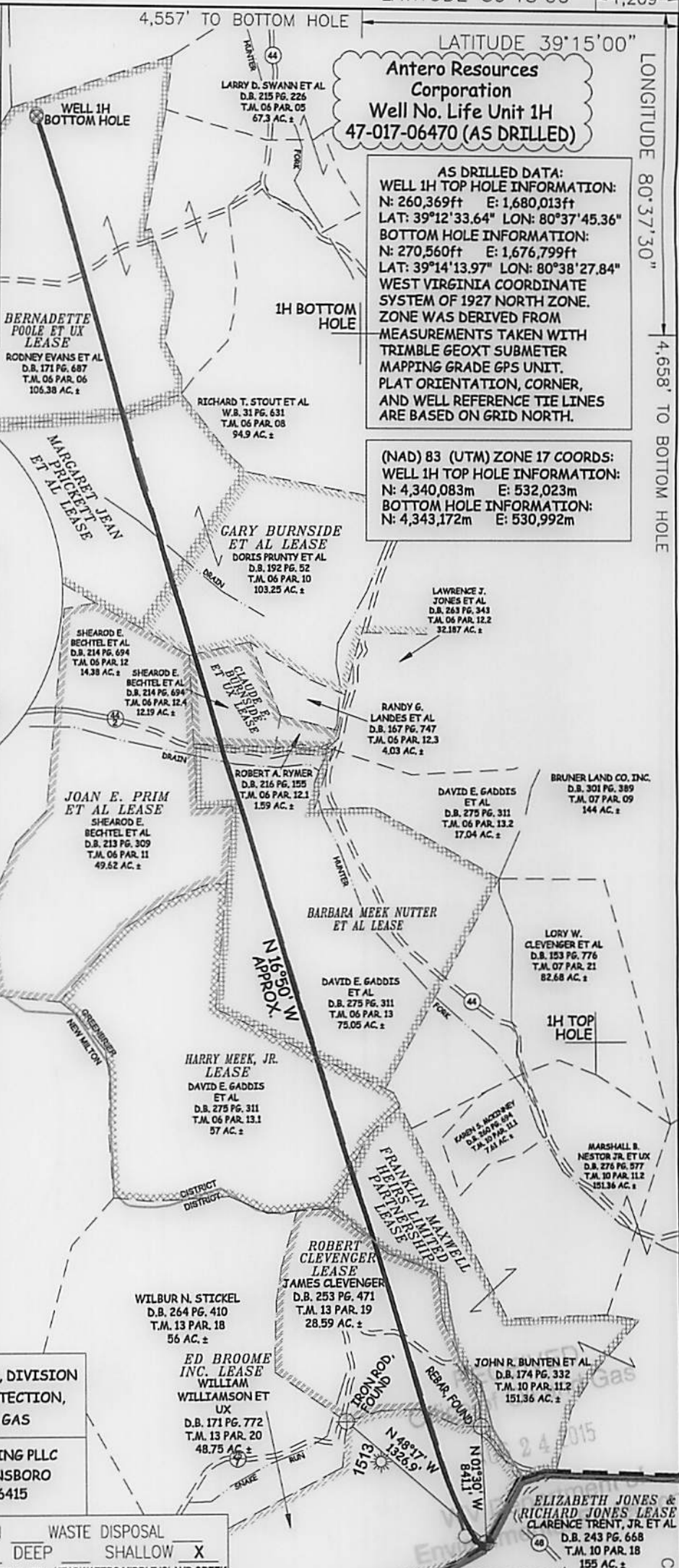
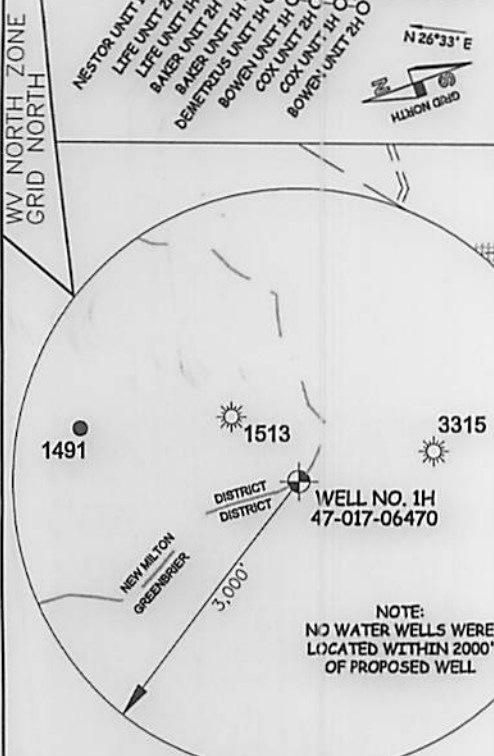
Antero Resources Corporation  
Well No. Life Unit 1H  
47-017-06470 (AS DRILLED)

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 260,369ft E: 1,680,013ft  
LAT: 39°12'33.64" LON: 80°37'45.36"  
BOTTOM HOLE INFORMATION:  
N: 270,560ft E: 1,676,799ft  
LAT: 39°14'13.97" LON: 80°38'27.84"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.  
ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 4,340,083m E: 532,023m  
BOTTOM HOLE INFORMATION:  
N: 4,343,172m E: 530,992m

- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWICE THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
  2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
  5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.
  6. THE INTERIOR BOUNDARY LINES OF THE DAVID E. GADDIS ET AL TRACTS (TH 6 PARCELS 13, 13.1 & 13.2) SHOWN HEREON IN BOLD ARE BASED ON CURRENT DEEDS OF RECORD ONLY. THE SURFACE OWNER REFUSED ACCESS ONTO HIS PROPERTY TO OBTAIN THE NECESSARY INFORMATION TO VERIFY THE LOCATION OF THE BOUNDARY. THESE LINES ARE SHOWN FOR MAPPING PURPOSES ONLY.

PAD LAYOUT NOT TO SCALE



JOB # 13-072WA  
DRAWING # LIFE1HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS  
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

- LEGEND**
- Surface Owner Boundary Lines +/-
  - - - Interior Surface Tracts +/-
  - X Existing Fence
  - ⊕ Found monument, as noted
  - Proposed Well Path
  - ⊙ As Drilled Well Path

DATE 04/01/15  
OPERATOR'S WELL# LIFE UNIT #1H  
API WELL # 47 - 017 - 06470  
STATE COUNTY PERMIT



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

WELL TYPE: OIL GAS  LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION  STORAGE DEEP SHALLOW   
LOCATION: ELEVATION 1,420' ORIGINAL - 1,409' AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK  
QUADRANGLE NEW MILTON 7.5' DISTRICT GREENBRIER COUNTY DODDRIDGE

SURFACE OWNER CIARENCE TRENT, JR. ET AL ACREAGE 155 ACRES +/-  
OIL & GAS ROYALTY OWNER ELIZABETH JONES & RICHARD JONES; ED BROOME INC.; ROBERT CLEVINGER; FRANKLIN MAXWELL HEIRS LIMITED PARTNERSHIP; HARRY MEEK, JR.; BARBARA MEEK NUTTER ET AL; CLAUDE E. BURNSIDE ET UX; GARY BURNSIDE ET AL; MARGARET JEAN PRICKETT ET AL; BERNADETTE POOLE ET UX. LEASE ACREAGE 155 AC±; 48.75 AC±; 34.379 AC±; 44.8 AC±; 57 AC±; 75.05 AC±; 13.78 AC±; 64 AC±; 38.5 AC±; 106 AC±  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,437' TVD 17,840' MD  
WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313