

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

RECEIVED
Office of Oil and Gas

OCT 12 2017

WV Department of
Environmental Protection

API 47-095-02306 County Tyler District Centerville
Quad Shirley 7.5' Pad Name Dale Pad Field/Pool Name ---
Farm name Raymond Underwood Well Number Johnston Unit 2H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street 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 4364740m Easting 511844m
Landing Point of Curve Northing 4364328.619m Easting 511792.919m
Bottom Hole Northing 4362500m Easting 512446m

Elevation (ft) 1017' 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 09/16/2015 Date drilling commenced 03/01/2016 Date drilling ceased 07/23/2016
Date completion activities began 01/14/2017 Date completion activities ceased 06/19/2017
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 55' 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 1166', 1331' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

NAME: See on file
DATE: 10-25-17

Reviewed by: _____

11/10/2017

API 47-095 - 02306 Farm name Raymond Underwood Well number Johnston Unit 2H

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	24"	20"	40'	New	94#, J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	494'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2485'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	14384'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6732'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	185 sx	15.6	1.18	218	0	8 Hrs.
Surface	Class A	469 sx	15.31	1.2	563	0	8 Hrs.
Coal							
Intermediate 1	Class A	919 sx	15.6	1.18	1084	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1076 sx (Lead) 1210 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.2 (Lead), 1.84 (Tail)	3518	~500' Into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14384' MD, 6541' TVD (BHL) & 6544' TVD (Deepest Point Drilled) Loggers TD (ft) 14362' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5898'

** There were no wireline logs run on this pad. Please reference the wireline logs submitted with Rymer Unit 4HD (API#47-095-02273). 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 N/A

API 47- 095 - 02306 Farm name Raymond Underwood Well number Johnston Unit 2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

*** PLEASE SEE ATTACHED EXHIBIT 1**

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)

*** PLEASE SEE ATTACHED EXHIBIT 2**

Please insert additional pages as applicable.

API 47- 095 - 02306 Farm name Raymond Underwood Well number Johnston Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6465' (Top)</u> TVD	<u>6821' (Top)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 4100 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 7752 mcfpd Oil 98 bpd NGL --- bpd Water 316 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 ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
* PLEASE SEE ATTACHED EXHIBIT 3					

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Road City Williamsport State PA Zip 17701

Logging Company Allied Horizontal
Address 381 Colonial Manor Rd City North Huntingdon State PA Zip 15642

Cementing Company C&J Energy Services
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Halliburton
Address 121 Champion Way Suite 200 City Cannonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature  Title Permitting Agent Date 10/11/2017

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

API 47-095-02306 Farm Name Raymond Underwood Well Number Johnston Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/14/2017	14113	14283	60	Marcellus
2	5/4/2017	13912	14081	60	Marcellus
3	5/5/2017	13710	13880	60	Marcellus
4	5/5/2017	13509	13678	60	Marcellus
5	5/5/2017	13307	13477	60	Marcellus
6	5/6/2017	13106	13276	60	Marcellus
7	5/6/2017	12904	13074	60	Marcellus
8	5/7/2017	12703	12873	60	Marcellus
9	5/7/2017	12501	12671	60	Marcellus
10	5/7/2017	12300	12470	60	Marcellus
11	5/8/2017	12098	12268	60	Marcellus
12	5/8/2017	11897	12067	60	Marcellus
13	5/9/2017	11695	11865	60	Marcellus
14	5/9/2017	11494	11664	60	Marcellus
15	5/9/2017	11292	11462	60	Marcellus
16	5/10/2017	11091	11261	60	Marcellus
17	5/10/2017	10889	11059	60	Marcellus
18	5/11/2017	10688	10858	60	Marcellus
19	5/11/2017	10486	10656	60	Marcellus
20	5/11/2017	10285	10455	60	Marcellus
21	5/11/2017	10083	10253	60	Marcellus
22	5/12/2017	9882	10052	60	Marcellus
23	5/12/2017	9680	9850	60	Marcellus
24	5/13/2017	9479	9649	60	Marcellus
25	5/13/2017	9277	9447	60	Marcellus
26	5/13/2017	9076	9246	60	Marcellus
27	5/13/2017	8875	9044	60	Marcellus
28	5/14/2017	8673	8843	60	Marcellus
29	5/15/2017	8472	8641	60	Marcellus
30	5/15/2017	8270	8440	60	Marcellus
31	5/16/2017	8069	8239	60	Marcellus
32	5/16/2017	7867	8037	60	Marcellus
33	5/16/2017	7666	7836	60	Marcellus
34	5/17/2017	7464	7634	60	Marcellus
35	5/17/2017	7263	7433	60	Marcellus
36	5/17/2017	7061	7231	60	Marcellus
37	5/18/2017	6860	7030	60	Marcellus

API 47-095-02306 Farm Name Raymond Underwood Well Number Johnston Unit 2H

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	5/4/2017	75.7	6954	5373	3337	502690	10067	N/A
2	5/4/2017	75.9	6744	5855	3425	505170	10154	N/A
3	5/5/2017	75.4	6819	4803	3670	499980	9783	N/A
4	5/5/2017	76.1	6760	5770	3683	519740	10129	N/A
5	5/5/2017	74.0	7122	5617	3715	523130	11390	N/A
6	5/6/2017	73.5	7383	5524	3901	522380	11390	N/A
7	5/6/2017	73.9	7537	5460	3593	521140	13598	N/A
8	5/7/2017	76.2	6931	5741	3689	519380	11437	N/A
9	5/7/2017	78.2	6844	5491	3949	512021	9968	N/A
10	5/7/2017	77.7	6886	4652	3797	518800	9982	N/A
11	5/8/2017	77.6	6794	5054	3854	520130	10082	N/A
12	5/8/2017	75.3	6920	5246	3778	497380	9713	N/A
13	5/9/2017	72.9	6923	5831	3927	503167	11349	N/A
14	5/9/2017	78.3	6737	5406	3930	493800	9795	N/A
15	5/9/2017	72.2	6521	5313	4054	498240	10010	N/A
16	5/10/2017	71.5	7203	5421	4220	504490	11899	N/A
17	5/10/2017	77.2	7143	5271	3826	504660	10093	N/A
18	5/11/2017	75.8	6602	5112	3786	506480	9974	N/A
19	5/11/2017	75.0	7256	5143	3666	502770	11370	N/A
20	5/11/2017	76.3	6967	4956	3572	502550	10052	N/A
21	5/11/2017	75.6	6393	5054	3783	504430	9764	N/A
22	5/12/2017	76.2	6331	5082	4121	522490	10213	N/A
23	5/12/2017	75.9	6413	5234	3869	505690	9985	N/A
24	5/13/2017	72.5	6900	5145	3890	505070	9862	N/A
25	5/13/2017	75.4	6642	5480	3620	501350	9544	N/A
26	5/13/2017	73.2	6290	5692	3847	501550	9515	N/A
27	5/13/2017	74.6	6321	5616	3866	500480	9785	N/A
28	5/14/2017	74.7	6231	5633	4138	523220	9877	N/A
29	5/15/2017	75.3	6323	5234	3821	511430	9985	N/A
30	5/15/2017	70.8	6723	5650	3952	500150	10564	N/A
31	5/16/2017	64.7	7274	5642	4926	502350	13244	N/A
32	5/16/2017	75.3	7169	5644	3620	503300	12994	N/A
33	5/16/2017	72.7	6667	5577	3925	495420	9433	N/A
34	5/17/2017	76.4	6065	5576	4019	501610	9637	N/A
35	5/17/2017	76.6	6259	5643	4071	518460	10021	N/A
36	5/17/2017	78.0	6392	5630	4876	500330	10702	N/A
37	5/18/2017	76.5	6688	5723	4243	515220	10033	N/A
	AVG=	74.9	6,760	5,413	3,891	18,790,648	387,394	TOTAL

11/10/2017

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	55'	N/A	55'	N/A
Shale	est. -19	341	est. -19	341
Sandstone	est. 341	521	est. 341	521
Siltstone	est. 521	701	est. 521	701
Limestone	est. 701	751	est. 701	751
Shale	est. 751	1166	est. 751	1166
Trace Coal	est. 1166	1171	est. 1166	1171
Shale	est. 1171	1331	est. 1171	1331
Trace Coal	est. 1331	1336	est. 1331	1336
Sandstone	est. 1336	1631	est. 1336	1631
Shale	est. 1631	1911	est. 1631	1911
Big Lime	1911	2022	1911	2022
Big Injun	2022	2524	2022	2524
Gantz Sand	2524	2643	2524	2643
Fifty Foot Sandstone	2643	2744	2643	2744
Gordon	2744	3099	2744	3099
Fifth Sandstone	3099	3154	3099	3154
Bayard	3154	3505	3154	3505
Warren	3505	3852	3505	3852
Speechley	3852	4606	3852	4606
Bradford	4606	5036	4606	5036
Benson	5036	5262	5036	5262
Alexander	5262	5453	5262	5453
Elk	5453	5902	5453	5902
Rhinestreet	5902	6121	5902	6260
Sycamore	6121	6299	6260	6477
Middlesex	6299	6396	6477	6636
Burkett	6396	6429	6636	6710
Tully	6429	6465	6710	6821
Marcellus	6465	NA	6821	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.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date: 5/4/2017
Job End Date: 5/18/2017
State: West Virginia
County: Tyler
API Number: 47-095-02306-00-00
Operator Name: Antero Resources Corporation
Well Name and Number: Johnston 2H
Latitude: 39.43195000
Longitude: -80.86276667
Datum: NAD27
Federal Well: NO
Indian Well: NO
True Vertical Depth: 6,529
Total Base Water Volume (gal): 16,643,364
Total Base Non Water Volume: 0



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
Fresh Water	Operator	Base Fluid	Water	7732-18-5	100.00000	87.86270	Density = 8.340
Ingredients	Listed Above	Listed Above	Water	7732-18-5	100.00000	0.19448	

FR-76	Halliburton	Friction Reducer						
					Listed Below			
SP BREAKER	Halliburton	Breaker						
					Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor						
					Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent						
					Listed Below			
MC B-8614	Halliburton	Biocide						
					Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent						
					Listed Below			
MC S-2510T	Halliburton	Scale Inhibitor						
					Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant						
					Listed Below			

SAND- PREMIUM WHITE-40/70, BULK	Halliburton	Proppant							
			Listed Below						
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.									
	Crystalline silica, quartz		14808-60-7		100.00000		11.89436		
	Hydrochloric acid		7647-01-0		15.00000		0.02098		
	Hydrotreated light petroleum distillate		64742-47-8		30.00000		0.01939		
	Inorganic salt		Proprietary		30.00000		0.01939		
	Acrylamide acrylate copolymer		Proprietary		30.00000		0.01939		Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
	Guar gum		9000-30-0		100.00000		0.01508		
	Ethylene Glycol		107-21-1		60.00000		0.00849		
	Glutaraldehyde		111-30-8		30.00000		0.00266		
	Neutralized Polyacrylic Emulsion		Proprietary		10.00000		0.00141		
	Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides		68424-85-1		5.00000		0.00044		
	Sodium persulfate		7775-27-1		100.00000		0.00027		
	Ethanol		64-17-5		1.00000		0.00009		
	Methanol		67-56-1		60.00000		0.00008		
	Fatty acids, tall oil		Proprietary		30.00000		0.00003		
	Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide		68527-49-1		30.00000		0.00003		
	Ethoxylated alcohols		Proprietary		30.00000		0.00003		
	Olefins		Proprietary		5.00000		0.00001		
	Propargyl alcohol		107-19-7		10.00000		0.00001		

		Phosphoric acid	7664-38-2	0.10000	0.00001
		Sodium sulfate	7757-82-6	0.10000	0.00000

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)

LATITUDE 39°27'30"

8,251'

LATITUDE 39°25'00"

LONGITUDE 80°50'00"

9,579'

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Johnston Unit 2H
47-095-02306

WILLIE R. LESTER
D.B. 326 PG. 402
T.M. 04 PAR. 07
97.75 AC. ±

ROBERT L. RIPLEY ET AL
D.B. 327 PG. 77
T.M. 04 PAR. 06.2
18.75 AC. ±

RAYMOND UNDERWOOD
W.B. 28 PG. 70
T.M. 04 PAR. 12
76.5 AC. ±

RAYMOND V. UNDERWOOD ET UX LEASE

REGINA H. BERTOZZI ET AL
D.B. 334 PG. 420
T.M. 04 PAR. 08.3
41.86 AC. ±

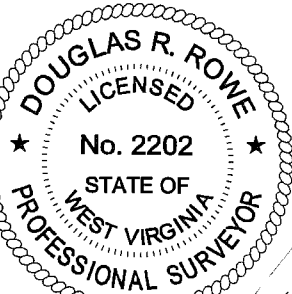
WELL NO. 2H

RAYMOND UNDERWOOD
D.B. 114 PG. 272
T.M. 04 PAR. 13
96 AC. ±

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 342,385ft E: 1,615,147ft
LAT: 39°25'55.33" LON: 80°51'45.16"
BOTTOM HOLE INFORMATION:
N: 335,003ft E: 1,616,998ft
LAT: 39°24'42.65" LON: 80°51'20.15"
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 2H TOP HOLE INFORMATION:
N: 4,364,740m E: 511,844m
BOTTOM HOLE INFORMATION:
N: 4,362,500m E: 512,446m

WV NORTH ZONE
GRID NORTH



- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO 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.

W.V.D.N.R. LEASE

STATE OF WV DNR
D.B. 156 PG. 54
T.M. 04 PAR. 14
244.25 AC. ±

FORREST E. LEASEBURG ET UX LEASE

WILLIAM LEASEBURG ET UX
D.B. 408 PG. 210
T.M. 08 PAR. 02
77.25 AC. ±

EDNA MONROE
D.B. 407 PG. 528
T.M. 08 PAR. 3.4
37.51 AC. ±

ROBERT JOHNSTON
D.B. 207 PG. 47
T.M. 08 PAR. 2.1
3.5 AC. ±

ROBERT JOHNSTON
D.B. 322 PG. 371
T.M. 08 PAR. 09
68.31 AC. ±

W.V. CONSERVATION COMMISSION
D.B. 156 PG. 353
T.M. 08 PAR. 22
111.41 AC. ±

GLINTON J. LANTZ ET AL
D.B. 420 PG. 124
T.M. 08 PAR. 07
71.19 AC. ±

RITA J. HITCHCOCK LEASE
ROBERT LEASURE ET UX
D.B. 222 PG. 191
T.M. 08 PAR. 08
50 AC. ±

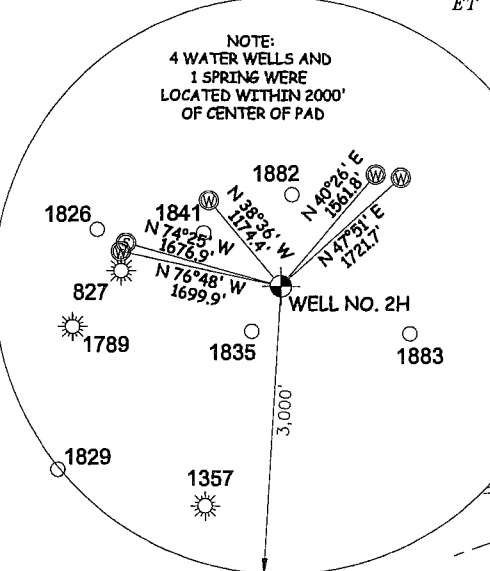
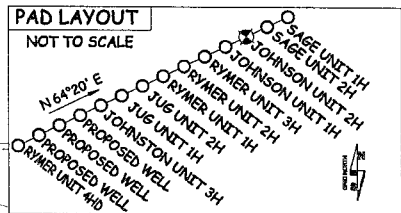
ROBERT JOHNSTON
D.B. 322 PG. 371
T.M. 08 PAR. 9.2
33.51 AC. ±

LILLIE H. MAPLE ET AL LEASE

JAMES L. HOWARD ET AL
D.B. 297 PG. 95
T.M. 08 PAR. 10
68.31 AC. ±

MARY LOU WELLS
D.B. 334 PG. 526
T.M. 08 PAR. 8.1
84.25 AC. ±

RALPH J. UNDERWOOD ET AL
D.B. 184 PG. 443
T.M. 08 PAR. 15
72.45 AC. ±



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

JOB # 15-034WA
DRAWING # JOHNSTON2HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND	
---	Surface Owner Boundary Lines +/-
- - - -	Interior Surface Tracts +/-
○	Proposed Well Path
⊗	As Drilled Well Path
DOUGLAS R. ROWE P.S. 2202	

11/10/2017

LATITUDE 39°27'30"

8,251'

LATITUDE 39°25'00"

LONGITUDE 80°50'00"

9,579'

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Johnston Unit 2H
47-095-02306

WILLIE R. LESTER
D.B. 326 PG. 402
T.M. 04 PAR. 07
97.75 AC. ±

ROBERT L. REBEY ET AL
D.B. 287 PG. 77
T.M. 04 PAR. 06.2
38.75 AC. ±

RAYMOND UNDERWOOD
W.B. 28 PG. 70
T.M. 04 PAR. 12
76.5 AC. ±

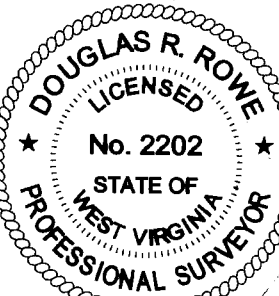
REGINA H. BERTOZZI ET AL
D.B. 334 PG. 430
T.M. 04 PAR. 08.3
41.86 AC. ±

RAYMOND UNDERWOOD
D.B. 114 PG. 272
T.M. 04 PAR. 13
96 AC. ±

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 342,385ft E: 1,615,147ft
LAT: 39°25'55.33" LON: 80°51'45.16"
BOTTOM HOLE INFORMATION:
N: 335,003ft E: 1,616,998ft
LAT: 39°24'42.65" LON: 80°51'20.15"
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 2H TOP HOLE INFORMATION:
N: 4,364,740m E: 511,844m
BOTTOM HOLE INFORMATION:
N: 4,362,500m E: 512,446m

WV NORTH ZONE
GRID NORTH



1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2000) SQUARE FEET OR LARGER USED TO HOUSE OR SHEDDLE BERRY CATTLE OR POLTRY MANURE ARE LOCATED WITHIN SIX HUNDRED THIRTY-FIVE (635) FEET OF THE CENTER OF THE WELL PAD.
2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALBERICI SURVING, INC.
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
4. WLS IS NOT GUARANTEEING THE DATA AND INFORMATION PROVIDED HEREIN IN FIGURES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE OWNERS.
5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR MISSTATEMENTS IN THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

W.V.D.N.R. LEASE

STATE OF WV DNR
D.B. 156 PG. 54
T.M. 04 PAR. 14
244.25 AC. ±

FORREST E. LEASEBURG ET UX LEASE

WILLIAM LEASEBURG ET UX
D.B. 408 PG. 210
T.M. 08 PAR. 02
77.25 AC. ±

EDNA MONROE
D.B. 407 PG. 528
T.M. 08 PAR. 3.4
37.51 AC. ±

ROBERT JOHNSTON
D.B. 207 PG. 47
T.M. 08 PAR. 2.1
3.5 AC. ±

ROBERT JOHNSTON
D.B. 322 PG. 371
T.M. 08 PAR. 09
68.31 AC. ±

W.V. CONSERVATION COMMISSION
D.B. 156 PG. 353
T.M. 08 PAR. 22
111.41 AC. ±

CLINTON J. LANTZ ET AL
D.B. 430 PG. 124
T.M. 08 PAR. 07
71.19 AC. ±

RITA J. HITCHCOCK LEASE
ROBERT LEASURE ET UX
D.B. 222 PG. 191
T.M. 08 PAR. 08
50 AC. ±

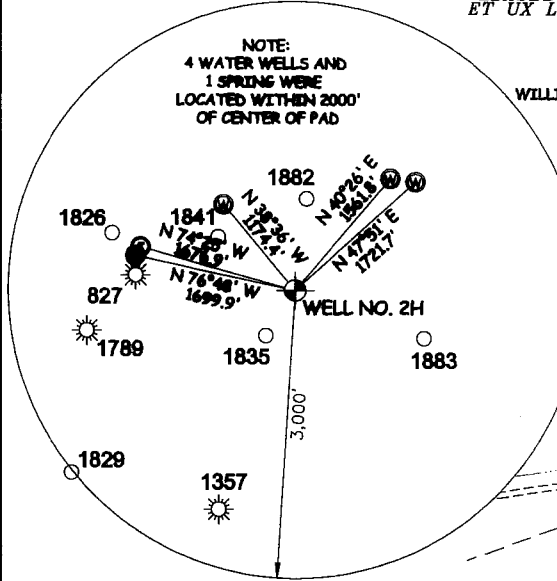
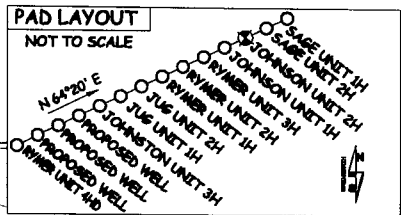
ROBERT JOHNSTON
D.B. 322 PG. 371
T.M. 08 PAR. 9.2
33.51 AC. ±

LILLIE H. MAPLE ET AL LEASE

JAMES L. HOWARD ET AL
D.B. 297 PG. 95
T.M. 08 PAR. 10
68.31 AC. ±

MARY LOU WELLS
D.B. 334 PG. 526
T.M. 08 PAR. B.1
84.25 AC. ±

RALPH J. UNDERWOOD ET AL
D.B. 184 PG. 443
T.M. 08 PAR. 15
74.482 AC. ±



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

JOB # 15-034WA
DRAWING # JOHNSTONHAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND
--- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
○ Proposed Well Path
⊗ As Drilled Well Path
DOUGLAS R. ROWE P.S. 2202

11/10/2017