

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

API 47-095-02269 County Tyler District Centerville
Quad Shirley 7.5' Pad Name Dale Pad Field/Pool Name ---
Farm name Raymond Underwood Well Number Rymer Unit 1H
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 4364734m Easting 511834m
Landing Point of Curve Northing 4364856.920m Easting 511808.625m
Bottom Hole Northing 4367126m Easting 510994m

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 07/14/2015 Date drilling commenced 03/01/2016 Date drilling ceased 06/19/2016
Date completion activities began 01/14/2017 Date completion activities ceased 06/28/2017
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

Reviewed by:

API 47-095 - 02269 Farm name Raymond Underwood Well number Rymer 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	24"	20"	40'	New	94#, J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	528'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2530'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	14876'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6635'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details *Cement plug performed on 06/10/2016.

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	102 sx	15.6	1.18	120	0	8 Hrs.
Surface	Class A	640 sx	15.6	1.2	768	0	8 Hrs.
Coal							
Intermediate 1	Class A	922 sx*	15.6	1.18	1088	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	871 sx (Lead) 1293 sx (Tail)	13.47 (Lead), 15.16 (Tail)	1.44 (Lead), 1.83 (Tail)	3620	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14876' MD, 6475' TVD (BHL) & 6862' TVD (Deepest Point Drilled) Loggers TD (ft) 14862' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5900'

** 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 - 02269 Farm name Raymond Underwood Well number Rymer Unit 1H

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 - 02269 Farm name Raymond Underwood Well number Rymer Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6476' (Top)</u> TVD	<u>6678' (Top)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

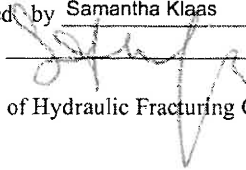
GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 4100 psi Bottom Hole --- psi DURATION OF TEST --- hrs
 OPEN FLOW Gas 7156 mcfpd Oil 119 bpd NGL --- bpd Water 282 bpd GAS MEASURED BY
 Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	<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 47-095-02269 Farm Name Raymond Underwood Well Number Rymer Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/14/2017	14605	14775	60	Marcellus
2	4/14/2017	14404	14574	60	Marcellus
3	4/14/2017	14203	14373	60	Marcellus
4	4/14/2017	14001	14171	60	Marcellus
5	4/15/2017	13800	13970	60	Marcellus
6	4/15/2017	13599	13769	60	Marcellus
7	4/16/2017	13398	13567	60	Marcellus
8	4/16/2017	13196	13366	60	Marcellus
9	4/16/2017	12995	13165	60	Marcellus
10	4/17/2017	12794	12963	60	Marcellus
11	4/17/2017	12592	12762	60	Marcellus
12	4/19/2017	12391	12561	60	Marcellus
13	4/20/2017	12190	12360	60	Marcellus
14	4/20/2017	11988	12158	60	Marcellus
15	4/20/2017	11787	11957	60	Marcellus
16	4/21/2017	11586	11756	60	Marcellus
17	4/21/2017	11385	11554	60	Marcellus
18	4/22/2017	11183	11353	60	Marcellus
19	4/22/2017	10982	11152	60	Marcellus
20	4/23/2017	10781	10950	60	Marcellus
21	4/23/2017	10579	10749	60	Marcellus
22	4/23/2017	10378	10548	60	Marcellus
23	4/24/2017	10177	10347	60	Marcellus
24	4/24/2017	9975	10145	60	Marcellus
25	4/25/2017	9774	9944	60	Marcellus
26	4/25/2017	9573	9743	60	Marcellus
27	4/26/2017	9372	9541	60	Marcellus
28	4/27/2017	9170	9340	60	Marcellus
29	4/27/2017	8969	9139	60	Marcellus
30	4/28/2017	8768	8937	60	Marcellus
31	4/28/2017	8566	8736	60	Marcellus
32	4/29/2017	8365	8535	60	Marcellus
33	4/30/2017	8164	8334	60	Marcellus
34	4/30/2017	7962	8132	60	Marcellus
35	4/30/2017	7761	7931	60	Marcellus
36	5/1/2017	7560	7730	60	Marcellus
37	5/2/2017	7359	7528	60	Marcellus
38	5/2/2017	7157	7327	60	Marcellus
39	5/2/2017	6956	7126	60	Marcellus
40	5/3/2017	6755	6924	60	Marcellus

API 47-095-02269 Farm Name Raymond Underwood Well Number Rymer Unit 1H

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	4/13/2017	75.6	7244	5313	4200	350680	7961	N/A
2	4/14/2017	78.0	7092	6796	3612	353100	8002	N/A
3	4/14/2017	75.7	7001	5463	3668	352710	7974	N/A
4	4/14/2017	78.5	7075	6359	3828	360190	8079	N/A
5	4/15/2017	78.0	6935	5836	3734	369320	7833	N/A
6	4/15/2017	77.6	7037	5381	3889	363300	7612	N/A
7	4/16/2017	77.4	7330	6014	4026	354990	9153	N/A
8	4/16/2017	77.0	7013	4824	3794	356040	7609	N/A
9	4/16/2017	78.7	6917	6105	3814	365500	7964	N/A
10	4/17/2017	77.7	7030	5401	3627	355320	7767	N/A
11	4/17/2017	79.5	6922	4674	3782	354840	7685	N/A
12	4/19/2017	73.9	7202	5206	3817	354510	11646	N/A
13	4/20/2017	75.8	7078	5106	3890	352410	9417	N/A
14	4/20/2017	78.5	7116	4680	3551	367640	7697	N/A
15	4/20/2017	76.2	6668	5472	3703	352650	7753	N/A
16	4/21/2017	77.6	6962	6445	3786	352230	7783	N/A
17	4/21/2017	67.9	6573	5281	3747	355230	7857	N/A
18	4/22/2017	77.3	6530	5202	3812	349770	7557	N/A
19	4/22/2017	78.0	6982	5479	3681	352870	7691	N/A
20	4/23/2017	76.7	6792	5518	3479	353620	7639	N/A
21	4/23/2017	78.9	6710	5269	3686	352520	7677	N/A
22	4/23/2017	77.9	6500	5234	3710	352520	7429	N/A
23	4/24/2017	78.3	6951	4879	3672	356230	7522	N/A
24	4/24/2017	76.5	6474	5172	3780	358740	7602	N/A
25	4/25/2017	76.3	7210	5218	4420	353750	10355	N/A
26	4/25/2017	78.9	6851	5237	3603	355480	7665	N/A
27	4/26/2017	73.3	6792	5169	5285	353210	13677	N/A
28	4/27/2017	79.8	6464	5239	4133	355740	7515	N/A
29	4/27/2017	75.2	6465	5328	4641	195000	5895	N/A
30	4/28/2017	77.9	6360	5166	3509	364850	7455	N/A
31	4/28/2017	76.8	6364	5508	3787	378740	7870	N/A
32	4/29/2017	79.4	6417	5237	3617	379440	7714	N/A
33	4/30/2017	75.2	6163	5141	3660	378280	7822	N/A
34	4/30/2017	73.5	6342	5321	3689	376960	7589	N/A
35	4/30/2017	78.2	6607	5231	3740	372870	7811	N/A
36	5/1/2017	79.5	6225	5233	3992	379860	7641	N/A
37	5/2/2017	75.5	6036	5214	3761	355040	7652	N/A
38	5/2/2017	76.0	5912	5509	3787	354620	7419	N/A
39	5/2/2017	76.6	6026	5459	3711	370280	7674	N/A
40	5/3/2017	75.9	6883	5603	3702	377180	7470	N/A
	AVG=	76.9	6,731	5,398	3,833	14,248,230	322,134	TOTAL

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	1926	est. 1631	1930
Big Lime	1926	2029	1930	2034
Big Injun	2029	2539	2034	2545
Gantz Sand	2539	2653	2545	2659
Fifty Foot Sandstone	2653	2760	2659	2767
Gordon	2760	3103	2767	3110
Fifth Sandstone	3103	3158	3110	3165
Bayard	3158	3507	3165	3514
Warren	3507	3868	3514	3875
Speechley	3868	4199	3875	4206
Bradford	4199	4603	4206	4610
Benson	4603	5009	4610	5016
Alexander	5009	5248	5016	5256
Elk	5248	5423	5256	5434
Rhinestreet	5423	5797	5434	6163
Sycamore	5797	6137	6163	6371
Middlesex	6137	6314	6371	6519
Burkett	6314	6409	6519	6591
Tully	6409	6476	6591	6678
Marcellus	6476	NA	6678	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:	4/13/2017
Job End Date:	5/3/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02269-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Rymer 1H
Latitude:	39.43206400
Longitude:	-80.86249400
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,474
Total Base Water Volume (gal):	13,944,162
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	89.91039	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.24434	

Product Name	Halliburton	Gelling Agent						
WG-36 GELLING AGENT							Listed Below	
HYDROCHLORIC ACID	Halliburton	Solvent						
FR-76	Halliburton	Friction Reducer					Listed Below	
SP BREAKER	Halliburton	Breaker						
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					Listed Below	
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					Listed Below	
MC B-8614	Halliburton	Biocide					Listed Below	
MC S-2510T	Halliburton	Scale Inhibitor					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	9.79888
	Hydrochloric acid	7647-01-0		15.00000	0.02851
	Inorganic salt	Proprietary		30.00000	0.01934
	Acrylamide acrylate copolymer	Proprietary		30.00000	0.01934
	Hydrotreated light petroleum distillate	64742-47-8		30.00000	0.01934
	Guar gum	9000-30-0		100.00000	0.01329
	Ethylene Glycol	107-21-1		60.00000	0.00832
	Glutaraldehyde	111-30-8		30.00000	0.00264
	Neutralized Polyacrylic Emulsion	Proprietary		10.00000	0.00139
	Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1		5.00000	0.00044
	Sodium persulfate	7775-27-1		100.00000	0.00026
	Ethanol	64-17-5		1.00000	0.00009
	Methanol	67-56-1		0.14000	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(f) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°27'30"

8,278'

11.027' TO BOTTOM HOLE

LATITUDE 39°27'30"

LONGITUDE 80°50'00"

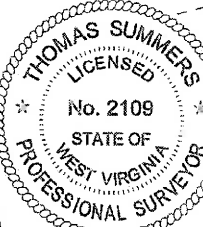
1.742' TO BOTTOM HOLE

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Rymer Unit 1H
47-095-02269

1H BOTTOM HOLE

WV NORTH ZONE
GRID NORTH



DAVID L. MAPLE
LEASE
STATE OF WV DNR
D.B. 227 PG. 141
T.M. 04 PAR. 28
38.75 AC. ±

MARK D. FLETCHER
D.B. 230 PG. 627
T.M. 04 PAR. 27
34.94 AC. ±

MARK DOUGLAS
FLETCHER LEASE
MARK D. FLETCHER
D.B. 230 PG. 627
T.M. 04 PAR. 29
52 AC. ±

STATE OF WV DNR
D.B. 307 PG. 217
T.M. 04 PAR. 25
100 AC. ±

JOHN ROBERT
SPENCE
ET UX LEASE

JOHN R. SPENCE ET UX
D.B. 373 PG. 759
T.M. 04 PAR. 26
21.71 AC. ±

STATE OF WV DNR
D.B. 256 PG. 17
T.M. 04 PAR. 01
222.85 AC. ±

STATE OF WV DNR
D.B. 255 PG. 246
T.M. 04 PAR. 02
10 AC. ±

STATE OF WV DNR
D.B. 255 PG. 254
T.M. 04 PAR. 01,3
10 AC. ±

STATE OF WV DNR
D.B. 255 PG. 245
T.M. 04 PAR. 01,4
10 AC. ±

SCOTT C. BLAIR ET AL
D.B. 296 PG. 599
T.M. 04 PAR. 08,4
64.17 AC. ±

STAR FURNITURE CO.
D.B. 248 PG. 466
T.M. 04 PAR. 08,2
2.79 AC. ±

REGINA H. BERTOZZI ET AL
D.B. 334 PG. 420
T.M. 04 PAR. 06,3
41.86 AC. ±

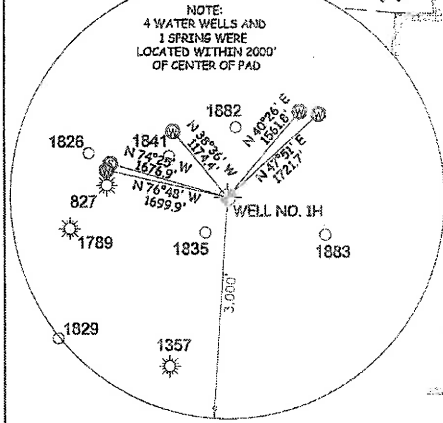
ROBERT L. RIPLEY ET AL
D.B. 327 PG. 77
T.M. 04 PAR. 05,1
16.75 AC. ±

RAYMOND UNDERWOOD
D.B. 156 PG. 54
T.M. 04 PAR. 14
244.25 AC. ±

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

- 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHEEP BARNY CRITIC 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. WALS 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 RECORDS.
- 5. WALS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WITH THIS DATA AND INFORMATION THAT HAS BEEN PROVIDED.

NOTE:
4 WATER WELLS AND
1 SPRING WERE
LOCATED WITHIN 2000'
OF CENTER OF PAD



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 PRESCRIBED 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 # 13-104WA
DRAWING # RYMER1HAD
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

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

DATE 09/28/17
OPERATOR'S WELL # RYMER UNIT 1H

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____ 47 - 095 - 02269
 (IF "GAS") PRODUCTION STORAGE _____ DEEP _____ SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,017' AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE SHIRLEY 7.5' DISTRICT CENTERVILLE COUNTY TYLER
 SURFACE OWNER RAYMOND UNDERWOOD ACREAGE 23 ACRES +/-
 OIL & GAS ROYALTY OWNER RAYMOND V. UNDERWOOD ET UX; ROBERT L. BROWN ET UX; LEASE ACREAGE 96 ACRES +/-; 97.75 ACRES +/-
 CATHY JO ASH ET AL; JOHN ROBERT SPENCE ET UX; MARK DOUGLAS FLETCHER 315.25 AC +/-; 21 ACRES +/-; 85 ACRES +/-
 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 6,475' TVD 14,875' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 CHARLESTON, WV 25313

LATITUDE 39°27'30"

8,278'

11,027' TO BOTTOM HOLE

LATITUDE 39°27'30"

LONGITUDE 80°50'00"

1,742' TO BOTTOM HOLE

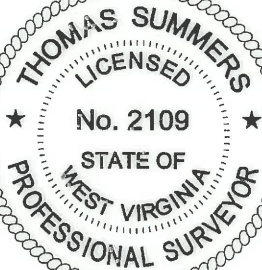
LONGITUDE 80°50'00"

COUNTY NAME

PERMIT

Antero Resources Corporation
Well No. Rymer Unit 1H
47-095-02269

1H BOTTOM HOLE



AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 342,368ft E: 1,615,111ft
LAT: 39°25'55.15" LON: 80°51'45.62"
BOTTOM HOLE INFORMATION:
N: 350,263ft E: 1,612,488ft
LAT: 39°27'12.79" LON: 80°52'20.58"
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: 4,364,734m E: 511,834m
BOTTOM HOLE INFORMATION:
N: 4,367,126m E: 510,994m

- 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 HEREIN 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.

NOTE:
4 WATER WELLS AND 1 SPRING WERE LOCATED WITHIN 2000' OF CENTER OF PAD



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 # 13-104WA
DRAWING # RYMER1HAD
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

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

DATE 09/28/17
OPERATOR'S WELL# RYMER UNIT #1H

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL 47 - 095 - 02269
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,017' AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE SHIRLEY 7.5' DISTRICT CENTERTVILLE COUNTY TYLER
 SURFACE OWNER RAYMOND UNDERWOOD ACREAGE 23 ACRES +/-
 OIL & GAS ROYALTY OWNER RAYMOND V. UNDERWOOD ET UX; ROBERT L. BROWN ET UX; LEASE ACREAGE 96 ACRES±; 97.75 ACRES±;
 CATHY JO ASH ET AL; JOHN ROBERT SPENCE ET UX; MARK DOUGLAS FLETCHER 315.25 AC±; 21 ACRES±; 86 ACRES±
 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 6,475' TVD 14,876' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313