

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

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AUG 21 2017
WV Department of
Environmental Protection

API 47 - 095 - 02294 County Tyler District Centerville
Quad Middlebourne 7.5' Pad Name Estlack Pad Field/Pool Name ---
Farm name Edna Monroe Well Number Matthews 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 4362783m Easting 510493m
Landing Point of Curve Northing 4362921.771m Easting 510372.580m
Bottom Hole Northing 4365785m Easting 509354m

Elevation (ft) 1142' 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 08/26/2015 Date drilling commenced 10/07/2015 Date drilling ceased 01/10/2016
Date completion activities began 06/25/2016 Date completion activities ceased 12/02/2016
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 46', 98' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 748', 1222' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 228', 1128', 1628' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

NAME: Se m B
DATE: 9-15-17

Reviewed by: DH

10/06/2017

WR-35
Rev. 8/23/13

Page _____

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API 47-095 - 02294 Farm name Edna Monroe Well number Matthews 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"	72'	New	94#, J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	398'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2529'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	16975'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6791'		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	123 sx	15.6	1.18	145	0	8 Hrs.
Surface	Class A	491 sx	15.6	1.19	584	0	8 Hrs.
Coal							
Intermediate 1	Class A	980 sx	15.6	1.18	1156	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	984 sx (Lead), 1592 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.33 (Lead), 1.83 (Tail)	4222	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16975' MD, 6618' TVD (BHL & Deepest point drilled) Loggers TD (ft) 16925' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6123'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Lucy Unit 1H API# 47-095-02276). Please reference the wireline logs submitted with Form WR-35 for the Lucy Unit 1H. 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

10/06/2017

API 47-095-02294 Farm Name Edna Monroe Well Number Matthews Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6/25/2016	16711	16852	60	Marcellus
2	7/11/2016	16512	16680	60	Marcellus
3	7/12/2016	16313	16481	60	Marcellus
4	7/13/2016	16115	16282	60	Marcellus
5	7/13/2016	15916	16084	60	Marcellus
6	7/14/2016	15718	15885	60	Marcellus
7	7/14/2016	15519	15687	60	Marcellus
8	7/15/2016	15321	15488	60	Marcellus
9	7/15/2016	15122	15290	60	Marcellus
10	7/16/2016	14923	15091	60	Marcellus
11	7/16/2016	14725	14892	60	Marcellus
12	7/17/2016	14526	14694	60	Marcellus
13	7/17/2016	14328	14495	60	Marcellus
14	7/18/2016	14129	14297	60	Marcellus
15	7/19/2016	13931	14098	60	Marcellus
16	10/5/2016	13732	13900	60	Marcellus
17	10/5/2016	13534	13701	60	Marcellus
18	10/6/2016	13335	13502	60	Marcellus
19	10/6/2016	13136	13304	60	Marcellus
20	10/6/2016	12938	13105	60	Marcellus
21	10/6/2016	12739	12907	60	Marcellus
22	10/7/2016	12541	12708	60	Marcellus
23	10/7/2016	12342	12510	60	Marcellus
24	10/7/2016	12144	12311	60	Marcellus
25	10/8/2016	11945	12112	60	Marcellus
26	10/8/2016	11746	11914	60	Marcellus
27	10/8/2016	11548	11715	60	Marcellus
28	10/9/2016	11349	11517	60	Marcellus
29	10/9/2016	11151	11318	60	Marcellus
30	10/9/2016	10952	11120	60	Marcellus
31	10/10/2016	10754	10921	60	Marcellus
32	10/10/2016	10555	10722	60	Marcellus
33	10/10/2016	10356	10524	60	Marcellus
34	10/11/2016	10158	10325	60	Marcellus
35	10/11/2016	9959	10127	60	Marcellus
36	10/11/2016	9761	9928	60	Marcellus
37	10/11/2016	9562	9730	60	Marcellus
38	10/12/2016	9364	9531	60	Marcellus
39	10/12/2016	9165	9332	60	Marcellus
40	10/12/2016	8966	9134	60	Marcellus
41	10/13/2016	8768	8935	60	Marcellus
42	10/13/2016	8569	8737	60	Marcellus
43	10/13/2016	8371	8538	60	Marcellus
44	10/14/2016	8172	8340	60	Marcellus
45	10/14/2016	7974	8141	60	Marcellus
46	10/14/2016	7775	7942	60	Marcellus
47	10/15/2016	7576	7744	60	Marcellus
48	10/15/2016	7378	7545	60	Marcellus
49	10/16/2016	7179	7347	60	Marcellus
50	10/16/2016	6981	7148	60	Marcellus
51	10/16/2016	6782	6950	60	Marcellus

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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	7/11/2016	75.9	7723	3722	3729	403518	9171	N/A
2	7/11/2016	72.4	7737	5178	4490	401748	9795	N/A
3	7/12/2016	70.0	7894	5242	3509	400462	11124	N/A
4	7/13/2016	77.6	7761	5509	3371	401107	9120	N/A
5	7/13/2016	74.3	7490	5522	3446	403073	9168	N/A
6	7/14/2016	75.5	7484	5574	3829	401347	9079	N/A
7	7/14/2016	75.9	7565	5570	3470	402131	9114	N/A
8	7/15/2016	77.2	7627	5437	3563	401102	9220	N/A
9	7/15/2016	79.1	7493	5642	3917	402685	9116	N/A
10	7/16/2016	76.5	7596	5301	3510	403497	8984	N/A
11	7/16/2016	82.5	7775	5394	3614	401988	9986	N/A
12	7/17/2016	78.7	7331	5393	3489	401835	8960	N/A
13	7/17/2016	80.0	7396	5433	3385	400985	10601	N/A
14	7/18/2016	74.4	7389	5303	6072	280035	8075	N/A
15	7/19/2016	76.0	7605	5861	9158	226559	6533	N/A
16	10/5/2016	77.8	7384	5820	4532	407057	9049	N/A
17	10/5/2016	75.9	7190	5526	3940	399912	9005	N/A
18	10/6/2016	78.4	7486	5297	4267	400310	9072	N/A
19	10/6/2016	76.8	7603	5366	3947	402366	9031	N/A
20	10/6/2016	79.1	7255	5533	3965	402697	9118	N/A
21	10/6/2016	79.0	7214	5600	4189	403068	9088	N/A
22	10/7/2016	79.4	7162	5338	3981	401818	8986	N/A
23	10/7/2016	78.8	7282	5491	3913	405272	9064	N/A
24	10/7/2016	79.5	7014	5312	4262	402491	9098	N/A
25	10/8/2016	79.0	7027	5513	4298	402366	9069	N/A
26	10/8/2016	79.8	6886	5584	4086	402602	8915	N/A
27	10/8/2016	74.9	7019	5674	4030	403517	8975	N/A
28	10/9/2016	73.9	6980	5636	4027	404015	8962	N/A
29	10/9/2016	77.8	7400	5613	3944	403084	8941	N/A
30	10/9/2016	73.5	6969	5777	4719	400678	10666	N/A
31	10/10/2016	79.8	6901	5452	3953	402311	9031	N/A
32	10/10/2016	79.4	7174	5701	3754	402004	9047	N/A
33	10/10/2016	74.5	6505	5518	3795	401889	8876	N/A
34	10/11/2016	72.4	6699	5859	3726	401941	8948	N/A
35	10/11/2016	79.7	7066	5772	3705	400834	9084	N/A
36	10/11/2016	79.5	6988	5708	3684	402331	8947	N/A
37	10/11/2016	82.3	7099	6092	3866	402221	11010	N/A
38	10/12/2016	77.3	7027	5697	3857	401039	8875	N/A
39	10/12/2016	79.8	7142	6377	3884	402478	9669	N/A
40	10/12/2016	78.5	7308	6057	3847	402419	10274	N/A
41	10/13/2016	78.2	7053	6091	3803	402930	8753	N/A
42	10/13/2016	75.8	7251	5841	3829	401170	9927	N/A
43	10/13/2016	79.3	6898	5836	3887	405613	8809	N/A
44	10/14/2016	77.9	7218	5776	3882	401088	8742	N/A
45	10/14/2016	76.1	7047	5823	3938	402227	8990	N/A
46	10/14/2016	79.4	7151	5656	3775	405040	8762	N/A
47	10/15/2016	78.3	7487	5800	4494	404040	8757	N/A
48	10/15/2016	79.2	7090	5866	3716	401353	8758	N/A
49	10/16/2016	79.1	7050	5311	3986	401590	8729	N/A
50	10/16/2016	79.3	6869	5791	4008	401543	8638	N/A
51	10/16/2016	77.1	6709	5499	3439	400875	10892	N/A
	AVG=	77.5	7,244	5,582	4,029	20,220,261	468,603	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	46'	N/A	46'	N/A
Fresh Water	98'	N/A	98'	N/A
Siltstone	0	228	0	228
Coal	est. 228	248	est. 228	248
Sandstone/Siltstone	est. 248	908	est. 248	908
Shale/Siltstone	est. 908	1128	est. 908	1128
Coal	est. 1128	1148	est. 1128	1148
Shale	est. 1148	1348	est. 1148	1348
Coal	est. 1348	1368	est. 1348	1368
Shale	est. 1368	1448	est. 1368	1448
Sandstone/Siltstone	est. 1448	1628	est. 1448	1628
Coal	est. 1628	1648	est. 1628	1648
Sandstone/Siltstone	est. 1648	2034	est. 1648	2036
Big Lime	2034	2154	2036	2156
Big Injun	2154	2705	2156	2707
Gantz Sand	2705	2797	2707	2799
Fifty Foot Sandstone	2797	2912	2799	2914
Gordon	2912	3218	2914	3220
Fifth Sandstone	3218	3277	3220	3279
Bayard	3277	3618	3279	3620
Warren	3618	3995	3620	3997
Speechley	3995	4710	3997	4712
Bradford	4710	5103	4712	5105
Benson	5103	5347	5105	5349
Alexander	5347	5527	5349	5529
Elk	5527	5910	5529	5913
Rhinestreet	5910	6214	5913	6220
Sycamore	6214	6383	6220	6420
Middlesex	6383	6481	6420	6586
Burkett	6481	6510	6586	6650
Tully	6510	6540	6650	6730
Marcellus	6540	NA	6730	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.

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10/06/2017

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/11/2016
Job End Date:	10/16/2016
State:	West Virginia
County:	Tyler
API Number:	47-095-02294-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Estlack Matthews 2H
Latitude:	39.41470000
Longitude:	-80.87828000
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,614
Total Base Water Volume (gal):	20,612,153
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	89.23679	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.20206	

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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			
SAND-COMMON WHITE - 100 MESH, 3307 LB BAG	Halliburton	Proppant					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			

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Environmental Protection

FDP-M1075-12	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	10.50908	
			Hydrochloric acid	7647-01-0	15.00000	0.02220	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01919	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01919	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000	0.01919	
			Guar gum	9000-30-0	100.00000	0.01891	
			Ethylene Glycol	107-21-1	60.00000	0.00845	
			Glutaraldehyde	111-30-8	30.00000	0.00261	
			Telomer	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	0.00036	
			Sodium polyacrylate	9003-04-7	1.00000	0.00014	
			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	
			Ethoxylated alcohols	Proprietary	30.00000	0.00003	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00003	
			Olefins	Proprietary	5.00000	0.00001	
			Propargyl alcohol	107-19-7	10.00000	0.00001	

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			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Acrylic acid	79-10-7	0.01000	0.00000	
			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)

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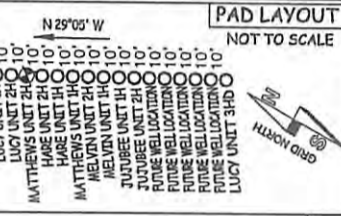
W.M. Spillner, Jr.
Director, Environmental Protection

4,650' TO BOTTOM HOLE

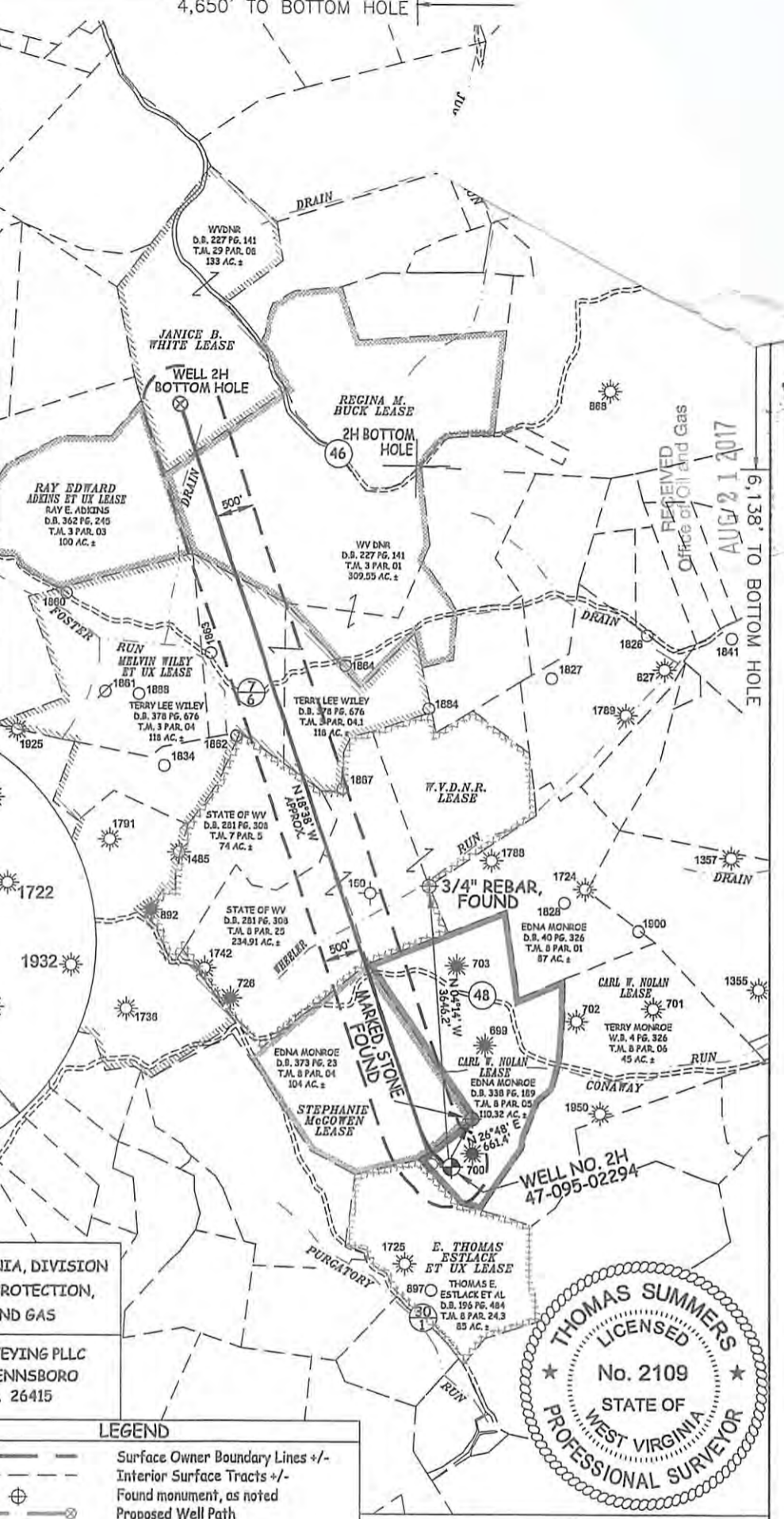
Antero Resources Corporation
Well No. Matthews Unit 2H
47-095-02294 (AS DRILLED)

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 336,039ft E: 1,610,604ft
LAT: 39°24'51.92" LON: 80°52'41.81"
BOTTOM HOLE INFORMATION:
N: 345,950ft E: 1,607,032ft
LAT: 39°26'29.34" LON: 80°53'29.28"
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: 4,362,783m E: 510,493m
BOTTOM HOLE INFORMATION:
N: 4,365,785m E: 509,354m



WV NORTH ZONE GRID NORTH



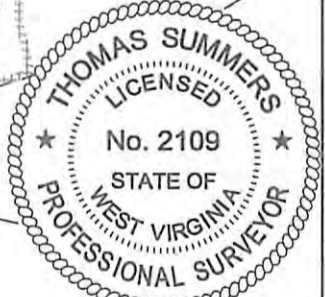
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6,138' TO BOTTOM HOLE



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 # 15-010WA
DRAWING # MATTHEWS2HADR
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND
--- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
⊕ Found monument, as noted
○ Proposed Well Path
○ As Drilled Well Path

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

THOMAS SUMMERS P.S. 2109
DATE 06/28/17
OPERATOR'S WELL# MATTHEWS UNIT #2H

- 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.

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 - 095 - 02294
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT
LOCATION: ELEVATION 1,142' - AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT CENTERVILLE COUNTY TYLER
SURFACE OWNER EDNA MONROE ACREAGE 110.32 ACRES +/-
OIL & GAS ROYALTY OWNER CARL W. NOLAN; STEPHANIE MCGOWEN; W.V.D.N.R. LEASE ACREAGE 116 AC.±; 170 AC.±; 553.16 AC.±;
MELVIN WILEY ET UX; REGINA M. BUCK; JANICE B. WHITE 378 AC.±; 309.55 AC.±; 133 AC.±
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,618' TVD 16,975' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

10/06/2017

LATITUDE 39°25'00" - 927'

4,650' TO BOTTOM HOLE

LATITUDE 39°27'30"

2H TOP HOLE

LONGITUDE 80°52'30"

LONGITUDE 80°52'30"

6,138' TO BOTTOM HOLE

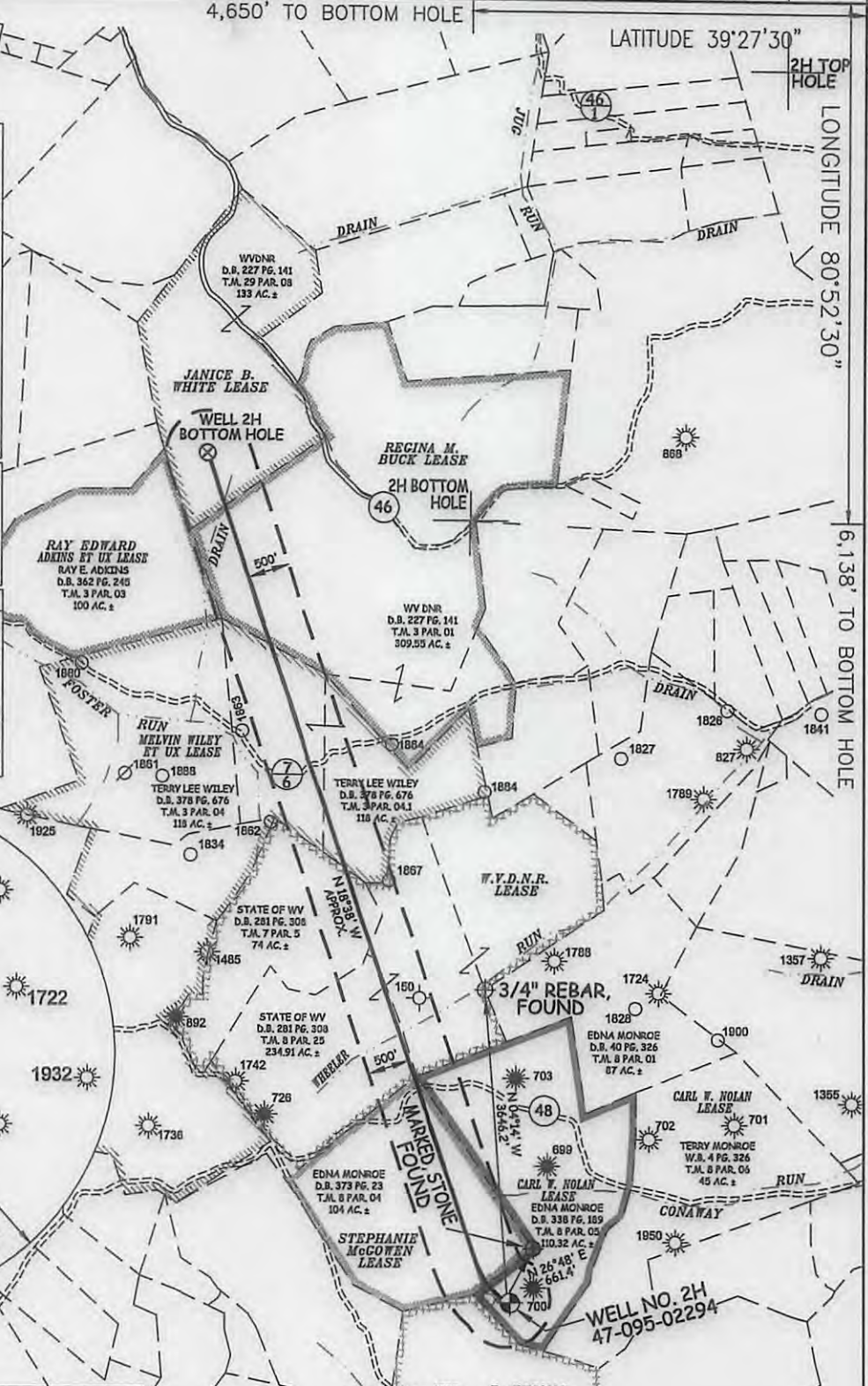
Antero Resources Corporation
Well No. Matthews Unit 2H
47-095-02294 (AS DRILLED)

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 336,039ft E: 1,610,604ft
LAT: 39°24'51.92" LON: 80°52'41.81"
BOTTOM HOLE INFORMATION:
N: 345,950ft E: 1,607,032ft
LAT: 39°26'29.34" LON: 80°53'29.28"
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.

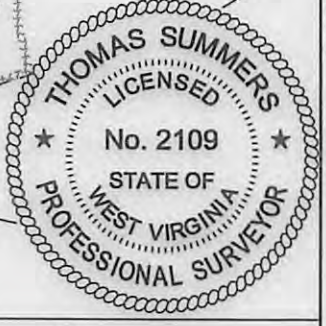
(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 4,362,783m E: 510,493m
BOTTOM HOLE INFORMATION:
N: 4,365,785m E: 509,354m



WV NORTH ZONE GRID NORTH



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 # 15-010WA
DRAWING # MATTHEWS2HADR
SCALE 1" = 2000'
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 +/-
⊕ Found monument, as noted
○ Proposed Well Path
○ As Drilled Well Path
THOMAS SUMMERS P.S. 2109
DATE 06/28/17
OPERATOR'S WELL# MATTHEWS UNIT #2H

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.

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 095 - 02294
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X STATE COUNTY PERMIT
LOCATION: ELEVATION 1,142' - AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK 10/06/2017
QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT CENTERVILLE COUNTY TYLER
SURFACE OWNER EDNA MONROE ACREAGE 110.32 ACRES +/-
OIL & GAS ROYALTY OWNER CARL W. NOLAN; STEPHANIE MCGOWEN; W.V.D.N.R. LEASE ACREAGE 116 AC.±; 170 AC.±; 553.16 AC.±;
MELVIN WILEY ET UX; REGINA M. BUCK; JANICE B. WHITE 378 AC.±; 309.55 AC.±; 133 AC.±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,818' TVD 16,975' MD
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