

APPROVED
NAME: *John L. The*
DATE: *11/16/16*



Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

October 7, 2016

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: John Kearney
601 57th Street
Charleston, WV 25304

Mr. Kearney:

Please find enclosed the Well Operator's Report of Well Work, Form WR-35 (including As-Drilled Survey Plat, Directional Survey and FracFocus report), Discharge Monitoring Report – Form WR-34 and corresponding logs for the following wells:

- Rainer Unit 1H (API# 47-017-06750) – Cofor Pad
- Rainer Unit 2H (API# 47-017-06763) – Cofor Pad

If you have any questions please feel free to contact me at (303) 357-7233.

Sincerely,

Kara Quackenbush

Kara Quackenbush
Permitting Agent
Antero Resources Corporation

Enclosures

West Virginia Department of Environmental Protection
Office of Oil and Gas
OCT 11 2016
Permitting Section

AK RBDMS
12/09/2016
12/08/16

APPROVED

NAME: [Signature]

State of West Virginia

DATE: 11/16/16

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

API 47 - 017 - 06750 County Doddridge District West Union
Quad West Union 7.5' Pad Name Cofor Pad Field/Pool Name ----
Farm name Coastal Forest Resources Company Well Number Rainer 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 4350014m Easting 517239m
Landing Point of Curve Northing 4350009.64m Easting 517591.07m
Bottom Hole Northing 4347598m Easting 518562m

Elevation (ft) 1189' 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 9/29/2015 Date drilling commenced 11/2/2015 Date drilling ceased 2/4/2016
Date completion activities began 4/6/2016 Date completion activities ceased 7/7/2016
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 87' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 737', 750' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 367', 567' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

12/09/2016

API 47-017 - 06750 Farm name Coastal Forest Resources Company Well number Rainer 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	94# H-40	N/A	Y
Surface	17-1/2"	13-3/8"	363'	New	42# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2395'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15957'	New	23# P-110	N/A	Y
Tubing		2-3/8"	7191'		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	200 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	426 sx	15.6	1.18	252	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1002 sx	15.6	1.18	750	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1007 sx (Lead) 1389 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.84 (Tail)	3221	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15957' MD, 6783' TVD (BHL); 6871' TVD (Deepest Point Drilled) Loggers TD (ft) 15909' MD

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

Plug back procedure N/A

Kick off depth (ft) 6689'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Morton Unit 1H API #47-017-06559). Please reference the wireline logs submitted with Form WR-35 for Morton 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 _____

API 47- 017 - 06750 Farm name Coastal Forest Resources Company Well number Rainer Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6827' (TOP)</u> TVD	<u>7176' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 11138 mcfpd Oil 98 bpd NGL --- bpd Water 697 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	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	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

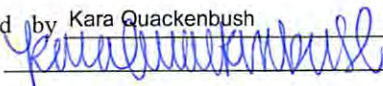
Drilling Contractor Patterson - UTI Drilling Company, LLC
Address 207 Carlton Dr. City Eighty-Four State PA Zip 15330

Logging Company Allied Horizontal Wireline Services
Address 380 Bedford Rd. City North Huntingdon State PA Zip 15642

Cementing Company Allied Oil & Gas Services, LLC
Address 1036 East Main St. City Bridgeport State WV Zip 26330

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 Permitting Agent Date 10/4/2016

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

API 47-017-06750 Farm Name Coastal Forest Resources Company Well Number Rainer Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6-Apr-16	15,690	15,853	60	Marcellus
2	20-May-16	15,497	15,660	60	Marcellus
3	20-May-16	15,304	15,467	60	Marcellus
4	21-May-16	15,111	15,274	60	Marcellus
5	21-May-16	14,918	15,081	60	Marcellus
6	21-May-16	14,725	14,888	60	Marcellus
7	21-May-16	14,532	14,695	60	Marcellus
8	22-May-16	14,339	14,502	60	Marcellus
9	22-May-16	14,146	14,309	60	Marcellus
10	22-May-16	13,953	14,116	60	Marcellus
11	22-May-16	13,760	13,923	60	Marcellus
12	22-May-16	13,567	13,730	60	Marcellus
13	23-May-16	13,374	13,537	60	Marcellus
14	23-May-16	13,181	13,344	60	Marcellus
15	23-May-16	12,988	13,151	60	Marcellus
16	24-May-16	12,795	12,958	60	Marcellus
17	24-May-16	12,602	12,765	60	Marcellus
18	24-May-16	12,409	12,572	60	Marcellus
19	24-May-16	12,216	12,379	60	Marcellus
20	25-May-16	12,023	12,186	60	Marcellus
21	25-May-16	11,830	11,993	60	Marcellus
22	25-May-16	11,637	11,800	60	Marcellus
23	26-May-16	11,444	11,607	60	Marcellus
24	26-May-16	11,251	11,414	60	Marcellus
25	26-May-16	11,058	11,221	60	Marcellus
26	26-May-16	10,865	11,028	60	Marcellus
27	26-May-16	10,672	10,835	60	Marcellus
28	27-May-16	10,479	10,642	60	Marcellus
29	27-May-16	10,286	10,449	60	Marcellus
30	27-May-16	10,093	10,256	60	Marcellus
31	27-May-16	9,900	10,063	60	Marcellus
32	28-May-16	9,654	9,825	60	Marcellus
33	28-May-16	9,451	9,622	60	Marcellus
34	28-May-16	9,249	9,420	60	Marcellus
35	28-May-16	9,046	9,217	60	Marcellus
36	28-May-16	8,843	9,014	60	Marcellus
37	29-May-16	8,640	8,811	60	Marcellus
38	29-May-16	8,438	8,609	60	Marcellus
39	29-May-16	8,235	8,406	60	Marcellus
40	29-May-16	8,032	8,203	60	Marcellus
41	30-May-16	7,829	8,000	60	Marcellus
42	30-May-16	7,627	7,798	60	Marcellus
43	30-May-16	7,424	7,595	60	Marcellus
44	30-May-16	7,221	7,392	60	Marcellus

12/09/2016

API 47-017-06750 Farm Name Coastal Forest Resources Company Well Number Rainer 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	20-May-16	67.3	7,087	0	5,097	348,775	8,273	N/A
2	20-May-16	68.1	7,068	5,481	5,109	348,940	8,264	N/A
3	20-May-16	68.6	7,315	6,058	5,128	347,600	8,299	N/A
4	21-May-16	68.9	7,152	5,372	4,756	348,400	8,245	N/A
5	21-May-16	68.7	6,999	5,571	4,982	348,945	8,223	N/A
6	21-May-16	70.1	7,048	5,641	5,017	349,120	8,217	N/A
7	21-May-16	70.4	7,155	5,404	5,332	348,800	8,317	N/A
8	22-May-16	70.0	7,151	5,701	5,103	348,100	8,237	N/A
9	22-May-16	65.8	6,786	5,304	5,009	349,005	8,196	N/A
10	22-May-16	69.5	6,966	5,501	5,082	349,450	8,179	N/A
11	22-May-16	68.5	7,083	5,840	4,377	347,805	8,184	N/A
12	22-May-16	65.8	7,020	5,600	5,465	348,400	9,306	N/A
13	23-May-16	64.5	7,239	5,765	5,102	349,260	8,181	N/A
14	23-May-16	68.5	6,991	5,601	4,873	349,195	8,145	N/A
15	23-May-16	68.4	7,195	5,676	4,753	347,900	8,158	N/A
16	24-May-16	70.3	7,192	6,090	4,781	347,500	8,143	N/A
17	24-May-16	68.3	6,953	5,528	4,509	347,805	8,121	N/A
18	24-May-16	68.6	7,025	5,788	4,251	349,040	8,109	N/A
19	24-May-16	69.9	7,025	5,575	3,998	348,700	8,120	N/A
20	25-May-16	68.1	6,864	5,590	4,131	349,000	8,107	N/A
21	25-May-16	71.8	7,025	5,571	5,024	349,435	8,718	N/A
22	25-May-16	68.1	7,112	5,591	4,617	349,070	9,009	N/A
23	26-May-16	68.9	7,122	6,248	4,957	348,500	8,086	N/A
24	26-May-16	68.3	6,826	5,325	4,975	349,115	8,063	N/A
25	26-May-16	68.2	6,749	5,461	4,671	350,395	8,060	N/A
26	26-May-16	67.8	6,846	5,718	4,853	349,280	8,045	N/A
27	26-May-16	73.2	7,284	5,833	4,488	349,600	8,075	N/A
28	27-May-16	72.4	7,223	5,597	4,256	349,900	8,067	N/A
29	27-May-16	68.4	6,871	5,427	5,007	350,020	8,778	N/A
30	27-May-16	70.1	6,902	5,307	4,327	349,630	8,014	N/A
31	27-May-16	71.0	7,276	5,611	5,475	348,840	8,015	N/A
32	28-May-16	72.0	7,398	5,547	5,001	348,620	9,030	N/A
33	28-May-16	68.1	7,124	5,405	4,895	349,495	7,992	N/A
34	28-May-16	69.3	7,244	5,613	4,859	349,175	8,861	N/A
35	28-May-16	72.6	7,528	5,593	5,046	350,880	7,998	N/A
36	28-May-16	78.3	7,592	5,196	5,343	350,600	8,018	N/A
37	29-May-16	78.4	7,436	5,565	3,973	351,320	7,954	N/A
38	29-May-16	77.5	7,566	5,597	4,621	349,375	8,816	N/A
39	29-May-16	76.2	7,538	5,618	5,009	349,000	7,935	N/A
40	29-May-16	77.7	7,683	5,765	8,422	349,600	7,754	N/A
41	30-May-16	75.7	7,506	5,890	4,699	349,500	9,209	N/A
42	30-May-16	70.4	7,642	6,123	4,678	245,500	9,488	N/A
43	30-May-16	76.8	7,095	5,465	5,511	349,500	7,904	N/A
44	30-May-16	77.4	7,304	6,541	4,824	349,500	7,957	N/A
AVG=		70.6	7,164	5,516	4,918	15,257,590	8,293	TOTAL

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	87'	N/A	87'	N/A
Sandstone	0	107	0	107
Shale	est. 107	147	est. 107	147
Sandstone	est. 147	205	est. 147	205
Shale	est. 205	367	est. 205	367
Sandstone and Coal	est. 367	447	est. 367	447
Shale	est. 447	485	est. 447	485
Sandstone	est. 485	507	est. 485	507
Shale	est. 507	567	est. 507	567
Coal & Shale	est. 567	587	est. 567	587
Shale	est. 587	687	est. 587	687
Sandstone/Siltstone	est. 687	827	est. 687	827
Shale	est. 827	1007	est. 827	1007
Sandstone	est. 1007	1025	est. 1007	1025
Shale	est. 1025	1107	est. 1025	1107
Sandstone	est. 1107	1147	est. 1107	1147
Shale	est. 1147	1247	est. 1147	1247
Shale and Trace Coal	est. 1247	1267	est. 1247	1267
Shale	est. 1267	1327	est. 1267	1327
Sandstone	est. 1327	1346	est. 1327	1346
Shale	est. 1346	1467	est. 1346	1467
Sandstone/Siltstone	est. 1467	1567	est. 1467	1567
Siltstone/Shale/Trace coal	est. 1567	1666	est. 1567	1666
Sandstone	est. 1666	1727	est. 1666	1727
Shale/Sandstone/Trace Coal	est. 1727	1846	est. 1727	1846
Shale	est. 1846	1988	est. 1846	1988
Siltstone/Shale/Sandstone	est. 1988	2125	est. 1988	2125
Shale/Limestone	est. 2125	2158	est. 2125	2158
Big Lime	2158	2657	2158	2657
Gantz Sand	2657	2767	2657	2767
Fifty Foot Sandstone	2767	2863	2767	2863
Gordon	2863	3192	2863	3192
Fifth Sandstone	3192	3988	3192	3988
Speechley	3988	4291	3988	4291
Baltown	4291	4717	4291	4717
Bradford	4717	5089	4717	5092
Benson	5089	5427	5092	5517
Alexander	5427	5592	5517	5704
Elk	5592	6110	5704	6272
Rhinestreet	6110	6422	6272	6615
Sycamore	6422	6599	6615	6820
Middlesex	6599	6729	6820	7009
Burkett	6729	6757	7009	7062
Tully	6757	6827	7062	7176
Marcellus	6827	NA	7176	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:	5/20/2016
Job End Date:	5/30/2016
State:	West Virginia
County:	Doddridge
API Number:	47-017-06750-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Rainer 1H
Latitude:	39.29924700
Longitude:	-80.80024400
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,871
Total Base Water Volume (gal):	15,782,900
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
Water	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	89.30033	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	10.35060	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.13601	
			Hydrogen Chloride	7647-01-0	18.00000	0.03249	
LGC-15	U.S. Well Services	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.03732	
			Petroleum Distillates	64742-47-8	60.00000	0.03534	
			Suspending agent (solid)	14808-60-7	3.00000	0.00571	
			Surfactant	68439-51-0	3.00000	0.00224	
WFRA-405	U.S. Well Services	Friction Reducer	Water	7732-18-5	60.00000	0.03771	
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01885	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01518	

			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00251
SI-1100s	U.S. Well Services	Scale Inhibitor				
			Water	7732-18-5	80.00000	0.01028
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00152
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00130
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00084
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00084
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00033
BIOCLEAR 2000	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	30.00000	0.00639
			Deionized Water	7732-18-5	28.00000	0.00243
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00146
AI-302	U.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00030
			2-Propyn-1-olcompound with methyloxirane	38172-91-7	15.00000	0.00005

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)

RECEIVED
 OFFICE OF
 ENVIRONMENTAL PROTECTION
 01/11/2013

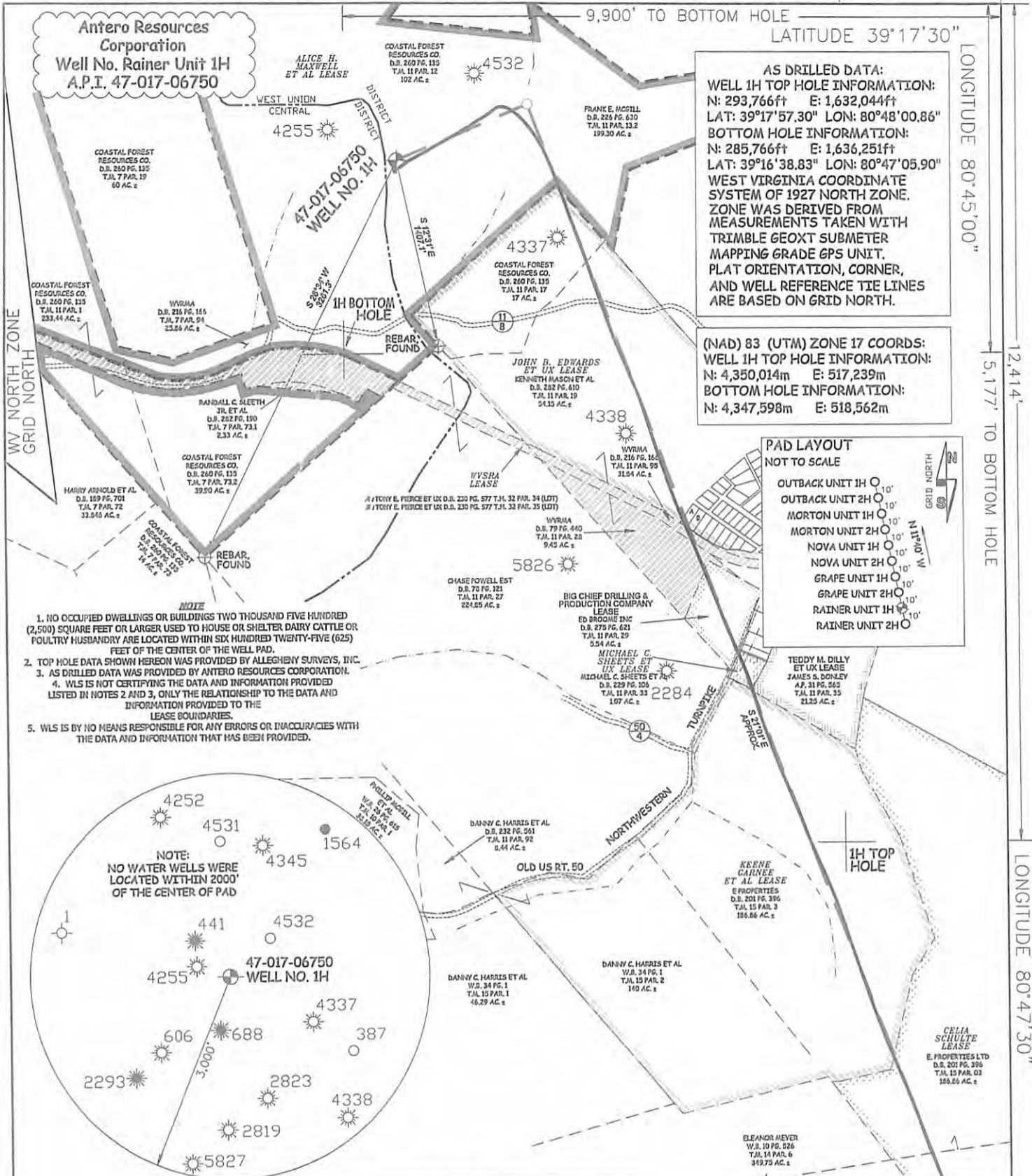
LATITUDE 39°20'00" 2,426'

LATITUDE 39°17'30"

LONGITUDE 80°45'00"

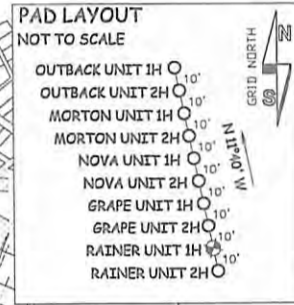
12,414'

LONGITUDE 80°47'30"

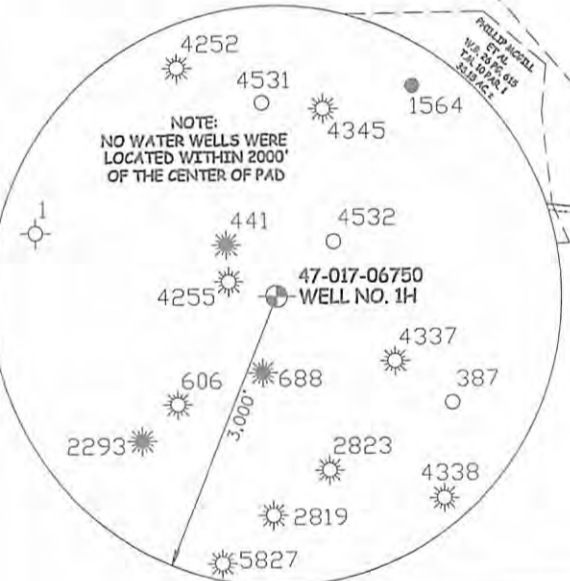


AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 293,766ft E: 1,632,044ft
 LAT: 39°17'57.30" LON: 80°48'00.86"
BOTTOM HOLE INFORMATION:
 N: 285,766ft E: 1,636,251ft
 LAT: 39°16'38.83" LON: 80°47'05.90"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH 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: 4,350,014m E: 517,239m
BOTTOM HOLE INFORMATION:
 N: 4,347,598m E: 518,562m



- 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.



LEGEND

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



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 # 15-035WA
 DRAWING # RAINER1HAD
 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
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,221' - ORIGINAL 1,189' - PROPOSED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE WEST UNION 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE

SURFACE OWNER COASTAL FOREST RESOURCES COMPANY ACREAGE 102 ACRES +/-
 OIL & GAS ROYALTY OWNER ALICE H. MAXWELL ET AL; JOHN B. EDWARDS ET UX; LEASE ACREAGE 420 AC±; 92 AC±;
 WVSRA; BIG CHIEF DRILLING & PRODUCTION CO.; MICHAEL C. SHEETS ET UX; TEDDY M. DILLY ET UX; KEENE GARNEE ET AL; CELIA SCHULTE 301.19 AC±; 5.54 AC±; 1.07 AC±; 23 AC±; 404 AC±; 200 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
 TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG
 WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 6,783' TVD 15,957' MD
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

12/09/2016

LATITUDE 39°20'00" 2,426'

LATITUDE 39°17'30"

LONGITUDE 80°45'00"

5,177' TO BOTTOM HOLE

LONGITUDE 80°47'30"

Antero Resources Corporation
Well No. Rainer Unit 1H
A.P.I. 47-017-06750

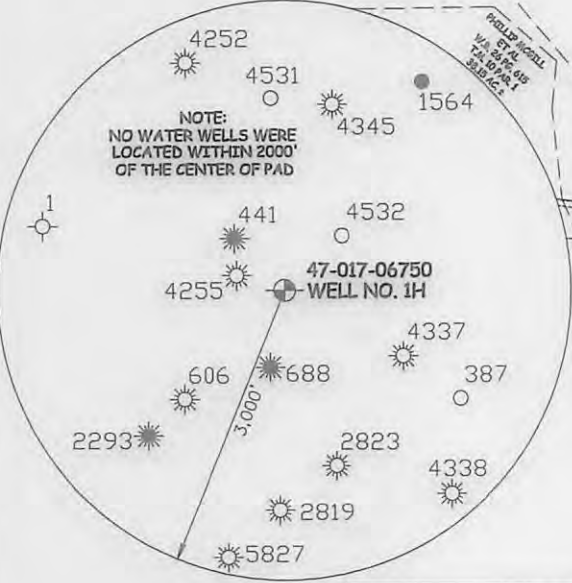
AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 293,766ft E: 1,632,044ft
LAT: 39°17'57.30" LON: 80°48'00.86"
BOTTOM HOLE INFORMATION:
N: 285,766ft E: 1,636,251ft
LAT: 39°16'38.83" LON: 80°47'05.90"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 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: 4,350,014m E: 517,239m
BOTTOM HOLE INFORMATION:
N: 4,347,598m E: 518,562m

PAD LAYOUT
NOT TO SCALE

- OUTBACK UNIT 1H
- OUTBACK UNIT 2H
- MORTON UNIT 1H
- MORTON UNIT 2H
- NOVA UNIT 1H
- NOVA UNIT 2H
- GRAPE UNIT 1H
- GRAPE UNIT 2H
- RAINER UNIT 1H
- RAINER UNIT 2H

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.
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LEGEND

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- Interior Surface Tracts +/-
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- Found monument, as noted
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STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS

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PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
LOCATION: ELEVATION 1,221' - ORIGINAL 1,169' - PROPOSED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE

SURFACE OWNER COASTAL FOREST RESOURCES COMPANY ACREAGE 102 ACRES +/-
OIL & GAS ROYALTY OWNER ALICE H. MAXWELL ET AL; JOHN B. EDWARDS ET UX; LEASE ACREAGE 420 AC±; 92 AC±;
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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
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,783' TVD 15,957' 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

DATE 09/13/16
OPERATOR'S WELL# RAINER1H
API WELL # 47 - 017 - 06750
STATE COUNTY PERMIT

12/09/2016