

APPROVED

NAME: dule g m Page of
DATE: 10/18/17

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

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WV Department of
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API 47-017-06727 County Doddrige District West Union
Quad West Union 7.5' Pad Name Cofor Pad Field/Pool Name
Farm name Coastal Forest Resources Company Well Number Nova 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 4350023m Easting 517237m
Landing Point of Curve Northing 4350068.774m Easting 516965.790m
Bottom Hole Northing 4353954m Easting 515354m

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 05/29/2015 Date drilling commenced 09/30/2015 Date drilling ceased 01/05/2016
Date completion activities began 09/24/2016 Date completion activities ceased 03/08/2017
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 67' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1666' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 367', 1247', 1727' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

01/05/2018

API 47-017 - 06727 Farm name Coastal Forest Resources Company Well number Nova Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	106.5#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	368'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2535'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	21102'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7057'		4.7#, N-80		
Packer type and depth set		N/A					

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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	151 sx	15.6	1.18	178	0'	8 Hrs.
Surface	Class A	422 sx	15.6	1.19	502	0'	8 Hrs.
Coal							
Intermediate 1	Class A	936 sx	15.6	1.18	1104	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	886 sx (Lead) 2258 sx (Tail)	13.66 (Lead), 15.16 (Tail)	1.44 (Lead), 1.83 (Tail)	5523	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 21102' MD, 6716' TVD (BHL) & 6850' TVD (Deepest Point Drilled) Loggers TD (ft) 21055' MD

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

Plug back procedure N/A

Kick off depth (ft) 6590'

** 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 N/A

API 47- 017 - 06727 Farm name Coastal Forest Resources Company Well number Nova 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					

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Well Completion Report
Electronic Submission

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- 017 - 06727 Farm name Coastal Forest Resources Company Well number Nova Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6780' (TOP)</u>	<u>TVD</u>	<u>7063' (TOP)</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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 ---

OPEN FLOW Gas 21121 mcfpd Oil 212 bpd NGL --- bpd Water 876 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 Drive City Eighty Four State PA Zip 15330

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

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

Stimulating Company US Well Services
Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature *Samantha Klaas* Title Permitting Agent Date 08/18/2017

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

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EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/24/2016	20832	20970	60	Marcellus
2	10/25/2016	20633	20801	60	Marcellus
3	10/25/2016	20434	20602	60	Marcellus
4	10/26/2016	20235	20403	60	Marcellus
5	10/26/2016	20037	20204	60	Marcellus
6	10/27/2016	19838	20005	60	Marcellus
7	10/27/2016	19639	19807	60	Marcellus
8	10/28/2016	19440	19608	60	Marcellus
9	10/28/2016	19241	19409	60	Marcellus
10	10/28/2016	19042	19210	60	Marcellus
11	10/29/2016	18843	19011	60	Marcellus
12	10/29/2016	18644	18812	60	Marcellus
13	10/30/2016	18445	18613	60	Marcellus
14	10/30/2016	18246	18414	60	Marcellus
15	10/31/2016	18048	18215	60	Marcellus
16	10/31/2016	17849	18016	60	Marcellus
17	10/31/2016	17650	17817	60	Marcellus
18	11/1/2016	17451	17619	60	Marcellus
19	11/1/2016	17252	17420	60	Marcellus
20	11/1/2016	17053	17221	60	Marcellus
21	11/2/2016	16854	17022	60	Marcellus
22	11/2/2016	16655	16823	60	Marcellus
23	11/3/2016	16456	16624	60	Marcellus
24	11/3/2016	16257	16425	60	Marcellus
25	11/4/2016	16059	16226	60	Marcellus
26	11/4/2016	15860	16027	60	Marcellus
27	11/4/2016	15661	15828	60	Marcellus
28	11/5/2016	15462	15630	60	Marcellus
29	11/5/2016	15263	15431	60	Marcellus
30	11/6/2016	15064	15232	60	Marcellus
31	11/6/2016	14865	15033	60	Marcellus
32	11/6/2016	14666	14834	60	Marcellus
33	11/7/2016	14467	14635	60	Marcellus
34	11/8/2016	14268	14436	60	Marcellus
35	11/9/2016	14070	14237	60	Marcellus
36	11/9/2016	13871	14038	60	Marcellus
37	11/10/2016	13672	13839	60	Marcellus
38	11/10/2016	13473	13641	60	Marcellus
39	11/10/2016	13274	13442	60	Marcellus
40	11/12/2016	13075	13243	60	Marcellus
41	11/12/2016	12876	13044	60	Marcellus
42	11/12/2016	12677	12845	60	Marcellus
43	11/13/2016	12478	12646	60	Marcellus
44	11/13/2016	12279	12447	60	Marcellus
45	11/13/2016	12081	12248	60	Marcellus
46	11/14/2016	11882	12049	60	Marcellus
47	11/14/2016	11683	11850	60	Marcellus
48	11/14/2016	11484	11652	60	Marcellus
49	11/15/2016	11285	11453	60	Marcellus
50	11/15/2016	11086	11254	60	Marcellus
51	11/16/2016	10887	11055	60	Marcellus
52	11/16/2016	10688	10856	60	Marcellus
53	11/17/2016	10489	10657	60	Marcellus
54	11/17/2016	10290	10458	60	Marcellus
55	11/18/2016	10092	10259	60	Marcellus
56	11/18/2016	9893	10060	60	Marcellus
57	11/18/2016	9694	9861	60	Marcellus
58	11/19/2016	9495	9663	60	Marcellus
59	11/25/2016	9296	9464	60	Marcellus
60	11/25/2016	9097	9265	60	Marcellus
61	11/26/2016	8898	9066	60	Marcellus
62	11/26/2016	8699	8867	60	Marcellus
63	11/26/2016	8500	8668	60	Marcellus
64	11/26/2016	8301	8469	60	Marcellus
65	11/27/2016	8103	8270	60	Marcellus
66	11/27/2016	7904	8071	60	Marcellus
67	11/27/2016	7705	7872	60	Marcellus
68	11/27/2016	7506	7674	60	Marcellus
69	11/27/2016	7307	7475	60	Marcellus
70	11/28/2016	7108	7276	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	(SIP) (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/ other (units)
1	10/25/2016	71.5	7395	0	2940	400400	9034	N/A
2	10/25/2016	71.6	7816	4789	4474	399900	9071	N/A
3	10/25/2016	74.1	8048	5218	4435	401100	9036	N/A
4	10/26/2016	72.6	7880	5554	4710	401400	9068	N/A
5	10/26/2016	75.5	8097	5322	4706	401000	8997	N/A
6	10/27/2016	75.0	8175	5375	4653	400400	10667	N/A
7	10/27/2016	74.8	8039	5193	4717	400300	8978	N/A
8	10/28/2016	72.1	7758	5068	4588	401400	9113	N/A
9	10/28/2016	74.2	7950	5157	3988	399900	9000	N/A
10	10/28/2016	74.4	7740	5611	3977	401400	9326	N/A
11	10/29/2016	73.2	7864	5146	3998	402250	8949	N/A
12	10/29/2016	72.8	7785	5411	4456	401800	8819	N/A
13	10/30/2016	71.9	7886	5529	4799	402400	10288	N/A
14	10/30/2016	75.5	8204	5525	4570	402100	8945	N/A
15	10/31/2016	75.4	7631	5132	5089	400700	8788	N/A
16	10/31/2016	76.8	8015	5025	4735	400520	8817	N/A
17	10/31/2016	73.8	7487	5150	4585	400800	8798	N/A
18	11/1/2016	73.2	7583	5271	4678	400700	8781	N/A
19	11/1/2016	76.4	7966	5202	4156	400695	8754	N/A
20	11/1/2016	75.8	7565	5450	4438	400200	8763	N/A
21	11/2/2016	76.1	8064	5443	4155	399610	9924	N/A
22	11/2/2016	73.5	7428	5225	4442	400400	8748	N/A
23	11/3/2016	74.4	7463	5289	4417	401100	8744	N/A
24	11/3/2016	77.1	7617	5293	4127	399860	8710	N/A
25	11/4/2016	75.6	7169	5246	4524	401100	8700	N/A
26	11/4/2016	74.2	7344	5216	4653	400795	8696	N/A
27	11/4/2016	75.3	7542	5283	4613	401100	8699	N/A
28	11/5/2016	74.8	7601	5201	4008	401195	8678	N/A
29	11/5/2016	77.7	7557	5339	4063	401200	8681	N/A
30	11/6/2016	77.8	7690	5450	4702	399830	8662	N/A
31	11/6/2016	76.1	7525	5326	5221	399395	8654	N/A
32	11/6/2016	78.0	7689	5461	4764	400960	8845	N/A
33	11/7/2016	73.6	7756	5247	5127	393000	9631	N/A
34	11/8/2016	73.9	7330	7414	4563	401800	9060	N/A
35	11/9/2016	74.0	7348	5301	4699	401700	8621	N/A
36	11/9/2016	70.6	7141	5267	4824	402100	8610	N/A
37	11/10/2016	72.2	7229	5500	4324	403200	8600	N/A
38	11/10/2016	74.6	7091	5203	4728	401440	8592	N/A
39	11/10/2016	59.0	8018	5428	4470	401600	12054	N/A
40	11/12/2016	72.3	7148	5168	4792	400700	8640	N/A
41	11/12/2016	74.5	7173	5446	4521	401740	8568	N/A
42	11/12/2016	72.4	7391	5361	4821	370200	8561	N/A
43	11/13/2016	72.8	7114	5203	4903	400200	8614	N/A
44	11/13/2016	72.5	6927	4938	4935	400280	8544	N/A
45	11/13/2016	72.4	7236	5243	4699	388500	8534	N/A
46	11/14/2016	70.7	7032	5111	3995	400300	8582	N/A
47	11/14/2016	71.4	6984	5586	4721	401500	8516	N/A
48	11/14/2016	70.6	6873	5157	4739	401900	8712	N/A
49	11/15/2016	71.1	6694	5107	4724	401500	8516	N/A
50	11/15/2016	71.7	6944	5558	4213	400500	8540	N/A
51	11/16/2016	71.0	6974	5207	5103	400600	8501	N/A
52	11/16/2016	72.3	6932	5286	4245	400500	8490	N/A
53	11/17/2016	69.8	6643	5171	4048	401900	8501	N/A
54	11/17/2016	71.4	6909	5225	4663	402100	8596	N/A
55	11/18/2016	71.4	6908	5422	5779	401175	8458	N/A
56	11/18/2016	71.8	6793	5254	5207	393740	8396	N/A
57	11/18/2016	70.6	6676	5085	4921	399400	8465	N/A
58	11/19/2016	70.3	6653	5339	4760	400700	8456	N/A
59	11/25/2016	77.8	7465	4889	3959	401100	8416	N/A
60	11/25/2016	75.9	7590	5378	4821	401850	8406	N/A
61	11/26/2016	75.6	7356	5906	4208	399160	8400	N/A
62	11/26/2016	78.9	7331	4996	4760	400600	8409	N/A
63	11/26/2016	79.6	7113	5668	4281	400600	8388	N/A
64	11/26/2016	78.4	7388	5497	4159	399605	8372	N/A
65	11/27/2016	75.6	7025	5311	4961	399660	8368	N/A
66	11/27/2016	79.1	7174	5640	4699	401400	8364	N/A
67	11/27/2016	80.1	6970	5271	4631	401600	8364	N/A
68	11/27/2016	80.4	6964	5504	5325	401600	8355	N/A
69	11/27/2016	78.0	6636	5168	4875	400675	8334	N/A
70	11/28/2016	79.9	6853	6094	4451	401795	8346	N/A
AVG=		74.1	7,391	5,264	4,572	28,007,830	615,613	TOTAL

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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	67'	N/A	67'	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/tr coal	est. 1567	1666	est. 1567	1666
Sandstone	est. 1666	1727	est. 1666	1727
Shale/sandstone/tr 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	2231	est. 2125	2233
Big Lime	2231	2671	2233	2673
Gantz Sand	2671	2801	2673	2803
Fifty Foot Sandstone	2801	2875	2803	2877
Gordon	2875	3207	2877	3209
Fifth Sandstone	3207	4000	3209	3239
Speechley	4000	4281	3239	4283
Baltown	4281	4731	4283	4733
Bradford	4731	5178	4733	5185
Benson	5178	5447	5185	5472
Alexander	5447	5610	5472	5654
Elk	5610	6119	5654	6214
Rhinestreet	6119	6412	6214	6539
Sycamore	6412	6587	6539	6741
Middlesex	6587	6711	6741	6920
Burkett	6711	6740	6920	6974
Tully	6740	6780	6974	7063
Marcellus	6780	NA	7063	NA

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*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:	10/24/2016
Job End Date:	11/28/2016
State:	West Virginia
County:	Doddridge
API Number:	47-017-06727-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Nova 2H
Latitude:	39.29932800
Longitude:	-80.80026700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,840
Total Base Water Volume (gal):	27,279,840
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	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	88.83788	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	10.93628	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.40000	0.11942	
			Hydrogen Chloride	7647-01-0	17.50000	0.02777	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.01682	
			Petroleum Distillates	64742-47-8	60.00000	0.01593	
			Suspending agent (solid)	14808-60-7	3.00000	0.00257	
			Surfactant	68439-51-0	3.00000	0.00101	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01778	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01432	

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Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00414	
			Deionized Water	7732-18-5	28.00000	0.00237	
SI-1100s	U.S. Well Services, LLC	Scale Inhibitor					
			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	3.00000	0.00052	
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	3.00000	0.00050	
			Phosphino carboxylic acid polymer	71050-62-9	3.00000	0.00050	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00049	
AI-302	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Water	7732-18-5	95.00000	0.00009	
			2-Propyn-1-olcompound with methyloxirane	38172-91-7	15.00000	0.00001	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00003	
			Butyl cellosolve	111-76-2	20.00000	0.00001	
			Formic acid	64-18-6	20.00000	0.00001	
			Cinnamaldehyde	104-55-2	20.00000	0.00001	
			Polyether	60828-78-6	10.00000	0.00000	
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00000	

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 Oil and Gas

AUG 21 2017

WV Department of
Environmental Protection

LATITUDE 39°20'00" 2,433'

LATITUDE 39°22'30" 8,583' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Nova Unit 2H
API 47-017-06727

8107/05/10

WV NORTH ZONE
GRID NORTH

14,645' TO BOTTOM HOLE

12,385'

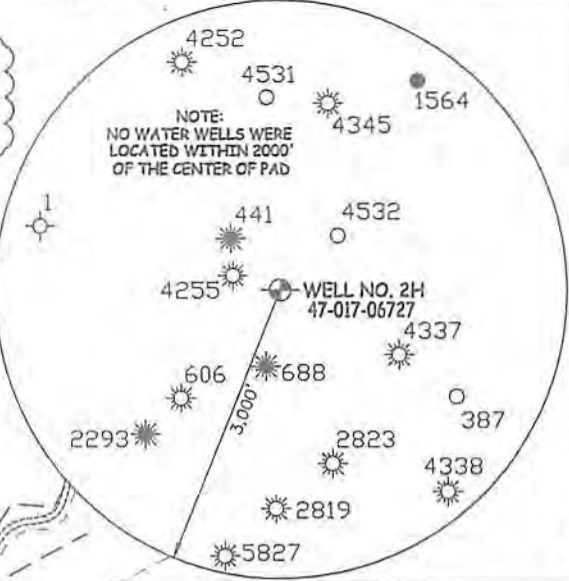
LONGITUDE 80°47'30"

LONGITUDE 80°47'30"

1102 1 & 51W

COUNTY NAME

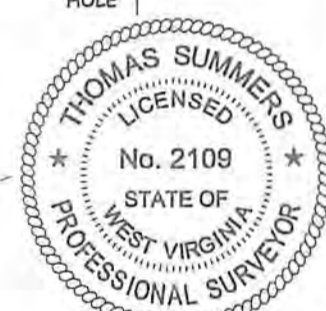
PERMIT



AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
 N: 293,795ft E: 1,632,037ft
 LAT: 39°17'57.59" LON: 80°48'00.95"
BOTTOM HOLE INFORMATION:
 N: 306,799ft E: 1,626,074ft
 LAT: 39°20'05.25" LON: 80°49'19.23"
 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: 4,350,023m E: 517,237m
BOTTOM HOLE INFORMATION:
 N: 4,353,954m E: 515,354m

- 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.



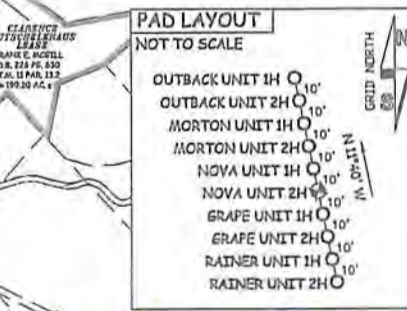
JOB # 15-002WA
 DRAWING # NOVA2HADR
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

DATE 07/14/17
 OPERATOR'S WELL# NOVAUNIT #2H
 API WELL # 47 - 017 - 06727
 STATE COUNTY PERMIT

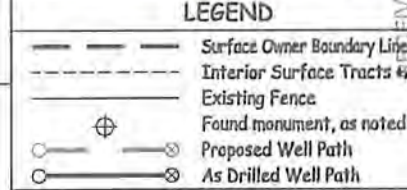
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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



THOMAS SUMMERS P.S. 2109



STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: AS-DRILLED ELEVATION 1,189'
 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 MAXWELL ET AL; GLENEVA MURRAY ET AL; LEASE ACREAGE 420 AC±; 125 AC±; MARY MAXINE WELCH; RICHARD MURRAY II; J. DAVIS ET AL; HAUGHT FAMILY TRUST; 202.28 AC±; 14.5 AC±; 12.6 AC±; 45 AC±; S.L. FORD ET UX; NELDA LOU KING; JAMES DOUGLAS WHITE; LEWIS MAXWELL ET AL; EDWIN CAIN ET UX 180 AC±; 10 AC±; 150 AC±; 120 AC±; 97 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 6,716' TVD 21,102' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

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 CHARLESTON, WV 25313

PERMIT COUNTY NAME
 S.T. FORD ET UX; MELDA LOU KING; JAMES DOUGLAS WHITE; LEWIS MAXWELL ET AL; EDWIN GAIN ET UX
 180 AC.; 10 AC.; 150 AC.; 120 AC.; 97 AC.
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 420 AC.; 125 AC.;
 SURFACE OWNER COASTAL FOREST RESOURCES COMPANY
 ACRES 102 ACRES +/-
 WEST VIRGINIA DISTRICT WEST UNION COUNTY DODDRIDGE

STATE OF WEST VIRGINIA DEPT. OF ENVIRONMENTAL PROTECTION, DIVISION OF OIL AND GAS
 WASTE DISPOSAL (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: AS-DRILLED ELEVATION 1,189'
 WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE WEST UNION 75 DISTRICT WEST UNION COUNTY DODDRIDGE
 WILLow LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND

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

THOMAS SUMMERS P.S. 2109

DATE 07/14/17
 OPERATOR'S WELL # NOVA UNIT 2H
 API WELL # 47-017-06727
 STATE COUNTY PERMIT
 WV-017-06727

JOB # 15-002VIA
 DRAWING # NOV24HADR
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
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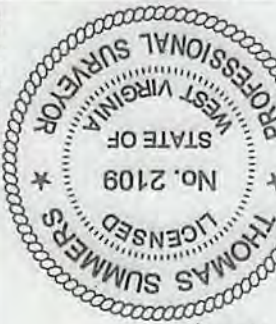
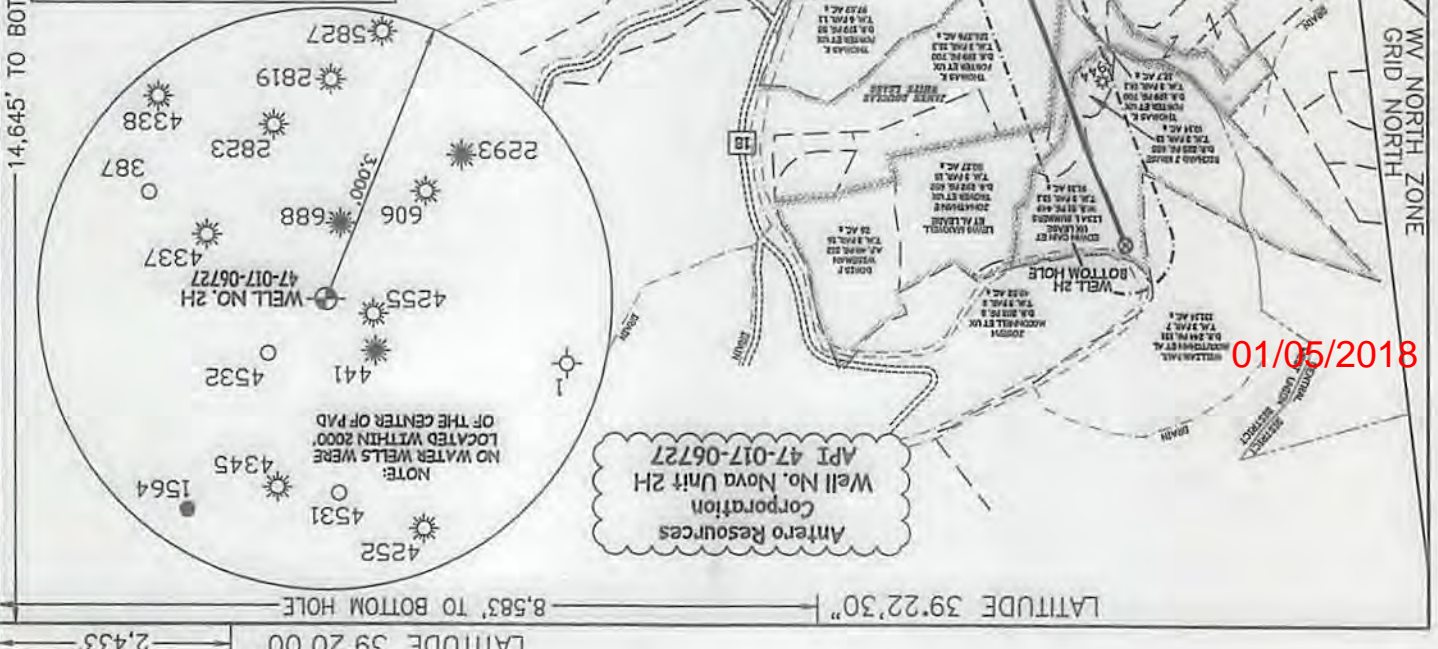
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WV NORTH ZONE
 GRID NORTH

Antero Resources
 Corporation
 Well No. Nova Unit 2H
 API 47-017-06727

01/05/2018