

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

API 47-085-10383 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Lynn Camp Pad Field/Pool Name -----
Farm name Terry Lee Richards Well Number Genny 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 4340529m Easting 504744m
Landing Point of Curve Northing 4340475.58m Easting 504238.38m
Bottom Hole Northing 4344621m Easting 502837m

Elevation (ft) 1149' 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

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of
Environmental Protection

Date permit issued 2/1/2019 Date drilling commenced 3/13/2019 Date drilling ceased 6/10/2019
Date completion activities began 1/6/2020 Date completion activities ceased 4/2/2020
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 222', 459' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1221', 1247' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 210', 784' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
DmH
12-7-20

API 47-085 - 10383 Farm name Terry Lee Richards Well number Genny 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"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	577'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2644'	New	36#, H-40	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	21495'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7175'		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	204 sx	15.6	1.18	244	0'	8 Hrs.
Surface	Class A	490 sx	15.6	1.19	402	0'	8 Hrs.
Coal							
Intermediate 1	Class A	905 sx	15.6	1.18	1047	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	798sx (Lead) 3465sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)	2819	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 21514' MD, 6439' TVD (BHL), 6441' (Deepest Point Drilled) Loggers TD (ft) 21514' MD

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

Plug back procedure N/A

Kick off depth (ft) 5800'

RECEIVED
Office of Oil and Gas

AUG 31 2020

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature

WV Department of Environmental Protection

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- 085 - 10383 Farm name Terry Lee Richards Well number Genny Unit 2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of
Environmental Protection

Please insert additional pages as applicable.

API 47- 085 - 10383 Farm name Terry Lee Richards Well number Genny Unit 2H

PRODUCING FORMATION(S)	DEPTHS		
<u>Marcellus</u>	<u>6352' (TOP)</u>	<u>TVD</u>	<u>6902' (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 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 15755 mcfpd Oil 266 bpd NGL --- bpd Water 1048 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of
Environmental Protection

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Nine Energy Services
Address 125 Museum Road City Washington State PA Zip 15301

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

Stimulating Company Baker Hughes
Address 837 Phillippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature [Signature] Title Permitting Agent Date 6-20-20

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

API 47-085-10383 Farm Name Terry Lee Richards Well Number Genny Unit 2H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/31/2020	21389	21345	60	Marcellus
2	2/1/2020	21307.21127	21140.2676	60	Marcellus
3	2/1/2020	21104.47887	20937.5352	60	Marcellus
4	2/1/2020	20901.74648	20734.8028	60	Marcellus
5	2/2/2020	20699.01408	20532.0704	60	Marcellus
6	2/2/2020	20496.28169	20329.338	60	Marcellus
7	2/2/2020	20293.5493	20126.6056	60	Marcellus
8	2/2/2020	20090.8169	19923.8732	60	Marcellus
9	2/3/2020	19888.08451	19721.1408	60	Marcellus
10	2/3/2020	19685.35211	19518.4085	60	Marcellus
11	2/3/2020	19482.61972	19315.6761	60	Marcellus
12	2/3/2020	19279.88732	19112.9437	60	Marcellus
13	2/4/2020	19077.15493	18910.2113	60	Marcellus
14	2/4/2020	18874.42254	18707.4789	60	Marcellus
15	2/4/2020	18671.69014	18504.7465	60	Marcellus
16	2/4/2020	18468.95775	18302.0141	60	Marcellus
17	2/5/2020	18266.22535	18099.2817	60	Marcellus
18	2/5/2020	18063.49296	17896.5493	60	Marcellus
19	2/5/2020	17860.76056	17693.8169	60	Marcellus
20	2/5/2020	17658.02817	17491.0845	60	Marcellus
21	2/6/2020	17455.29577	17288.3521	60	Marcellus
22	2/6/2020	17252.56338	17085.6197	60	Marcellus
23	2/6/2020	17049.83099	16882.8873	60	Marcellus
24	2/6/2020	16847.09859	16680.1549	60	Marcellus
25	2/7/2020	16644.3662	16477.4225	60	Marcellus
26	2/7/2020	16441.6338	16274.6901	60	Marcellus
27	2/7/2020	16238.90141	16071.9577	60	Marcellus
28	2/8/2020	16036.16901	15869.2254	60	Marcellus
29	2/8/2020	15833.43662	15666.493	60	Marcellus
30	2/8/2020	15630.70423	15463.7606	60	Marcellus
31	2/9/2020	15427.97183	15261.0282	60	Marcellus
32	2/9/2020	15225.23944	15058.2958	60	Marcellus
33	2/9/2020	15022.50704	14855.5634	60	Marcellus
34	2/9/2020	14819.77465	14652.831	60	Marcellus
35	2/10/2020	14617.04225	14450.0986	60	Marcellus
36	2/10/2020	14414.30986	14247.3662	60	Marcellus
37	2/10/2020	14211.57746	14044.6338	60	Marcellus
38	2/10/2020	14008.84507	13841.9014	60	Marcellus
39	2/11/2020	13806.11268	13639.169	60	Marcellus
40	2/11/2020	13603.38028	13436.4366	60	Marcellus
41	2/11/2020	13400.64789	13233.7042	60	Marcellus
42	2/12/2020	13197.91549	13030.9718	60	Marcellus
43	2/12/2020	12995.1831	12828.2394	60	Marcellus
44	2/12/2020	12792.4507	12625.507	60	Marcellus
45	2/13/2020	12589.71831	12422.7746	60	Marcellus
46	2/13/2020	12386.98592	12220.0423	60	Marcellus
47	2/13/2020	12184.25352	12017.3099	60	Marcellus
48	2/14/2020	11981.52113	11814.5775	60	Marcellus
49	2/14/2020	11778.78873	11611.8451	60	Marcellus
50	2/14/2020	11576.05634	11409.1127	60	Marcellus
51	2/15/2020	11373.32394	11206.3803	60	Marcellus
52	2/15/2020	11170.59155	11003.6479	60	Marcellus
53	2/15/2020	10967.85915	10800.9155	60	Marcellus
54	2/15/2020	10765.12676	10598.1831	60	Marcellus
55	2/16/2020	10562.39437	10395.4507	60	Marcellus
56	2/16/2020	10359.66197	10192.7183	60	Marcellus
57	2/16/2020	10156.92958	9989.98592	60	Marcellus
58	2/16/2020	9954.197183	9787.25352	60	Marcellus
59	2/16/2020	9751.464789	9584.52113	60	Marcellus
60	2/17/2020	9548.732394	9381.78873	60	Marcellus
61	2/17/2020	9346	9179.05634	60	Marcellus
62	2/17/2020	9143.267606	8976.32394	60	Marcellus
63	2/17/2020	8940.535211	8773.59155	60	Marcellus
64	2/18/2020	8737.802817	8570.85915	60	Marcellus
65	2/18/2020	8535.070423	8368.12676	60	Marcellus
66	2/18/2020	8332.338028	8165.39437	60	Marcellus
67	2/18/2020	8129.605634	7962.66197	60	Marcellus
68	2/19/2020	7926.873239	7759.92958	60	Marcellus
69	2/19/2020	7724.140845	7557.19718	60	Marcellus
70	2/19/2020	7521.408451	7354.46479	60	Marcellus
71	2/20/2020	7318.676056	7151.73239	60	Marcellus
72	2/20/2020	7115.943662	6949	60	Marcellus

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of
Environmental Protection

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 (bbbls)	Amount of Nitrogen/ other (units)
1	1/31/2020	73.51371	8869.185	6510	3687	159960	4656.126	N/A
2	2/1/2020	81.77213	9555.129	5651	3544	401800	8045.586	N/A
3	2/1/2020	77.81903	9263.942	5451	3315	405820	7421.18	N/A
4	2/1/2020	83.44946	9689.432	5708	3140	404600	7388.7	N/A
5	2/2/2020	78.70877	9401.108	6495	3324	400880	8504.67	N/A
6	2/2/2020	79.66177	9663.329	6155	3391	405620	7364.89	N/A
7	2/2/2020	82.29883	9948.893	6994	3420	402600	7337.21	N/A
8	2/2/2020	83.59712	9929.317	6391	3275	406720	7373.22	N/A
9	2/3/2020	84.00957	9995.992	6191	3479	402900	7397.12	N/A
10	2/3/2020	80.68735	9911.328	6293	3536	404000	7387.08	N/A
11	2/3/2020	77.32368	9264.593	6566	3253	404700	7284.98	N/A
12	2/3/2020	80.67098	9434.686	6229	3457	405600	7317.6	N/A
13	2/4/2020	82.7997	10002.31	6022	3686	399060	7334.7	N/A
14	2/4/2020	78.91889	9110.706	5797	3656	407880	7257.27	N/A
15	2/4/2020	85.7	9360.122	6033	3422	405520	7259.14	N/A
16	2/4/2020	87.9	9829.433	5969	3485	401460	7279.26	N/A
17	2/5/2020	88.1	9946.538	6101	3536	406740	7351.52	N/A
18	2/5/2020	85.5	9705.328	6176	3598	401140	7225.81	N/A
19	2/5/2020	87.1	9601.013	6094	3362	406720	7242.78	N/A
20	2/5/2020	88.1	9771.016	6546	3427	404900	7265.14	N/A
21	2/6/2020	87.4	9650.085	6310	3337	403240	7212.77	N/A
22	2/6/2020	83.8	9120.342	6484	3517	406440	7260.2	N/A
23	2/6/2020	87.2	9550.678	6430	3430	401080	7127.38	N/A
24	2/6/2020	87.6	9547.466	5779	3220	404360	7243.65	N/A
25	2/7/2020	87.9	8991.311	6057	3473	398900	7138.72	N/A
26	2/7/2020	86.8	9480.675	4966	3554	403840	7256.26	N/A
27	2/7/2020	87.5	9367.546	5409	3532	405080	7245.68	N/A
28	2/8/2020	88.1	8947.246	5677	3565	405300	7234.65	N/A
29	2/8/2020	86	8955.522	6394	3696	402600	6911.59	N/A
30	2/8/2020	88.9	9124.768	5899	3504	406320	7166.69	N/A
31	2/9/2020	88.6	9088.621	6143	3457	400860	7058.1	N/A
32	2/9/2020	87.5	8748.186	5649	3872	408280	7131.79	N/A
33	2/9/2020	88.6	8825	5524	3804	400480	6963.34	N/A
34	2/9/2020	88.9	8677.243	5414	3477	403580	7005.15	N/A
35	2/10/2020	88.8	8549.566	5832	3361	405160	7044.88	N/A
36	2/10/2020	89.5	8839.784	6048	3522	402780	7120	N/A
37	2/10/2020	85.3	8590.91	6467	3923	395480	6988.4	N/A
38	2/10/2020	89.8	8464.929	6530	4023	403140	7085.34	N/A
39	2/11/2020	89.8	8453.939	5912	4198	402940	7065.57	N/A
40	2/11/2020	85.1	7961.063	6217	3707	405300	6996.83	N/A
41	2/11/2020	86.6	8013.995	6324	3382	402560	6975.33	N/A
42	2/12/2020	84.4	8610.095	5435	3440	399380	7536.12	N/A
43	2/12/2020	87.5	8199.345	6049	3533	407080	6827.38	N/A
44	2/12/2020	86.18	8060.487	5990	3384	401240	6844.06	N/A
45	2/13/2020	83.22	7553.181	5192	3511	404040	7017.81	N/A
46	2/13/2020	84.6	7825.599	5725	3584	411300	7054.98	N/A
47	2/13/2020	79.68	7316.586	6951	4670	402420	10730.01	N/A
48	2/14/2020	84.4	7985.652	6612	3619	404740	6838.54	N/A
49	2/14/2020	85.04	8165.885	6368	3581	400520	6760.33	N/A
50	2/14/2020	83.67	7889.059	5441	3473	401420	6879.79	N/A
51	2/15/2020	84	7835.377	6395	3613	405640	6945.67	N/A
52	2/15/2020	84.6	7760.867	5328	3579	405320	6910.26	N/A
53	2/15/2020	84.4	7974.047	5809	3799	405660	6969.17	N/A
54	2/15/2020	84.5	7638.306	5307	3498	399320	6866.15	N/A
55	2/16/2020	84.9	7603.494	6038	3720	404760	6865.66	N/A
56	2/16/2020	86	7827.875	6751	3596	404380	6922.6	N/A
57	2/16/2020	85.8	7924.668	6500	3548	404700	6868.59	N/A
58	2/16/2020	84.4	7432.773	4846	3511	409500	6943.94	N/A
59	2/16/2020	84.7	7502.902	5708	3952	402380	8061.08	N/A
60	2/17/2020	84.3	7453.632	4921	3565	410440	6816.38	N/A
61	2/17/2020	84.4	7652.05	6863	3620	407440	6957.18	N/A
62	2/17/2020	84.5	7569.532	5706	3523	409140	6852.76	N/A
63	2/17/2020	85.4	7207.108	5889	3442	407440	6856.16	N/A
64	2/18/2020	85.2	7257.425	5574	3453	407560	6853.66	N/A
65	2/18/2020	84.9	7573.549	6161	3348	411380	6635.42	N/A
66	2/18/2020	85.8	7468.861	5124	3477	407940	6705.72	N/A
67	2/18/2020	84.5	7186.043	6147	3511	407240	6787.19	N/A
68	2/19/2020	84.3	7171.373	6121	3527	403540	6761.73	N/A
69	2/19/2020	84.8	7462.062	5718	3551	404420	6727.89	N/A
70	2/19/2020	84.8	7126.316	5628	3584	410280	6713.19	N/A
71	2/20/2020	85.3	7084.47	5393	3448	402900	6728.77	N/A
72	2/20/2020	85.3	7078.338	5643	3451	408920	6589.45	N/A
	AVG=	85.1	9,249	6,069	3,526	16,306,340	294,926	TOTAL

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of
Environmental Protection

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Black/Gray Shale	85	145	85	145
Sandy Shale	145	655	145	655
Silty Sandstone	655	865	655	865
Silty Shale	865	1,085	865	1,085
Sandy Siltstone	1,085	1,175	1,085	1,175
Silty Shale	1,175	1,365	1,175	1,365
Sandstone	1,365	1,295	1,365	1,295
Sandstone	1,295	1,645	1,295	1,645
Shale	1,645	1,745	1,645	1,745
Sandstone	1,745	1,805	1,745	1,805
Silty Sandstone	1,805	1,795	1,805	1,795
Sandstone	1,795	1,835	1,795	1,835
Sandstone	1,835	1,863	1,835	1,932
Big Lime	1,878	2,597	1,907	2,699
Fifty Foot Sandstone	2,597	2,732	2,674	2,880
Gordon	2,732	3,234	2,855	3,478
Fifth Sandstone	3,234	3,316	3,453	3,565
Bayard	3,316	3,892	3,540	4,170
Speechley	3,892	4,273	4,145	4,611
Balltown	4,273	4,647	4,586	5,019
Bradford	4,647	4,945	4,994	5,328
Benson	4,945	5,183	5,303	5,611
Alexander	5,183	6,230	5,586	6,838
Sycamore	6,057	6,205	6,586	6,813
Middlesex	6,205	6,305	6,813	7,053
Burkett	6,305	6,334	7,053	7,164
Tully	6,334	6,352	7,164	7,231
Marcellus	6,352	NA	7,231	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.

RECEIVED
Office of Oil and Gas
AUG 31 2020
Ohio Department of Environmental Protection

ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Facility: Lynn Camp Pad
 Wellbore: Genny Unit 2H PWB
 Slot: Slot #05
 Well: Genny Unit 2H

Plot references wellpath to Genny Unit 2H PWB Revv-A.0
True vertical depths are referenced to Patterson 342 (RKB)
Measured depths are referenced to Patterson 342 (RKB)
Depths are in feet
Mean Sea Level to Mean Sea Level: 1174 feet
Mean Sea Level to Ground level (At Slot: Slot #05) -1146 feet
Coordinates are in feet referenced to Slot

Location Information			
Facility Name	Grid East (US Ft)	Grid North (US Ft)	Longitude
Lynn Camp Pad	1655924.222	39°12'50.070"N	80°56'42.800"W
Local E (ft)	Local N (ft)	Local E (ft)	Local N (ft)
13.16	7.86	185932.962	14239839.201
Patterson 342 (RKB) to Ground level (At Slot: Slot #05)			
Mean Sea Level to Ground level (At Slot: Slot #05)			
Patterson 342 (RKB) to Mean Sea Level			
28ft			
-1146ft			
1174ft			

Well Profile Data			
Design Comment	MD (ft)	Inc (")	Az (°)
The Oh	6169.00	26.490	307.920
Prop. To Bottom	6592.00	29.990	312.780
End of 3D Arc	6422.00	36.577	324.527
POE	6674.38	74.865	341.105
Landing PL	7054.61	90.000	341.105
BHL	21622.34	90.000	341.105

Slot	Well	Wellbore
Slot #05	Genny Unit 2H	Genny Unit 2H AWB
Slot #05	Genny Unit 2H	Genny Unit 2H PWB
		Genny Unit 2H PWB Revv-A.0

Well Data

Gyrodata MS Gyro <17-1/2">(100-542) : 0.06° Inc, 110.00R MD, 110.00R TVD, 0.00R VS

WFT EM <12-1/4">(542)(682-2562) : 0.11° Inc, 692.00R MD, 692.00R TVD, -0.04R VS

WFT EM <8-3/4">(262)(262-8159) : 5.49° Inc, 2727.00R MD, 2660.92R TVD, -126.77R VS

Marcellus POE: 6927 MD : 6377.66R TVD, 345.32R S, 1625.87R W

BH AT Curve <8-1/2">(6169)(6222-21489) : 28.09° Inc, 6222.00R MD, 5966.08R TVD, -361.40R VS

WFT EM <12-1/4">(542)(682-2562) : 692.00R TVD, 0.05R S, 0.02R W

Gyrodata MS Gyro <17-1/2">(100-542) : 110.00R TVD, 0.01R S, 0.04R W

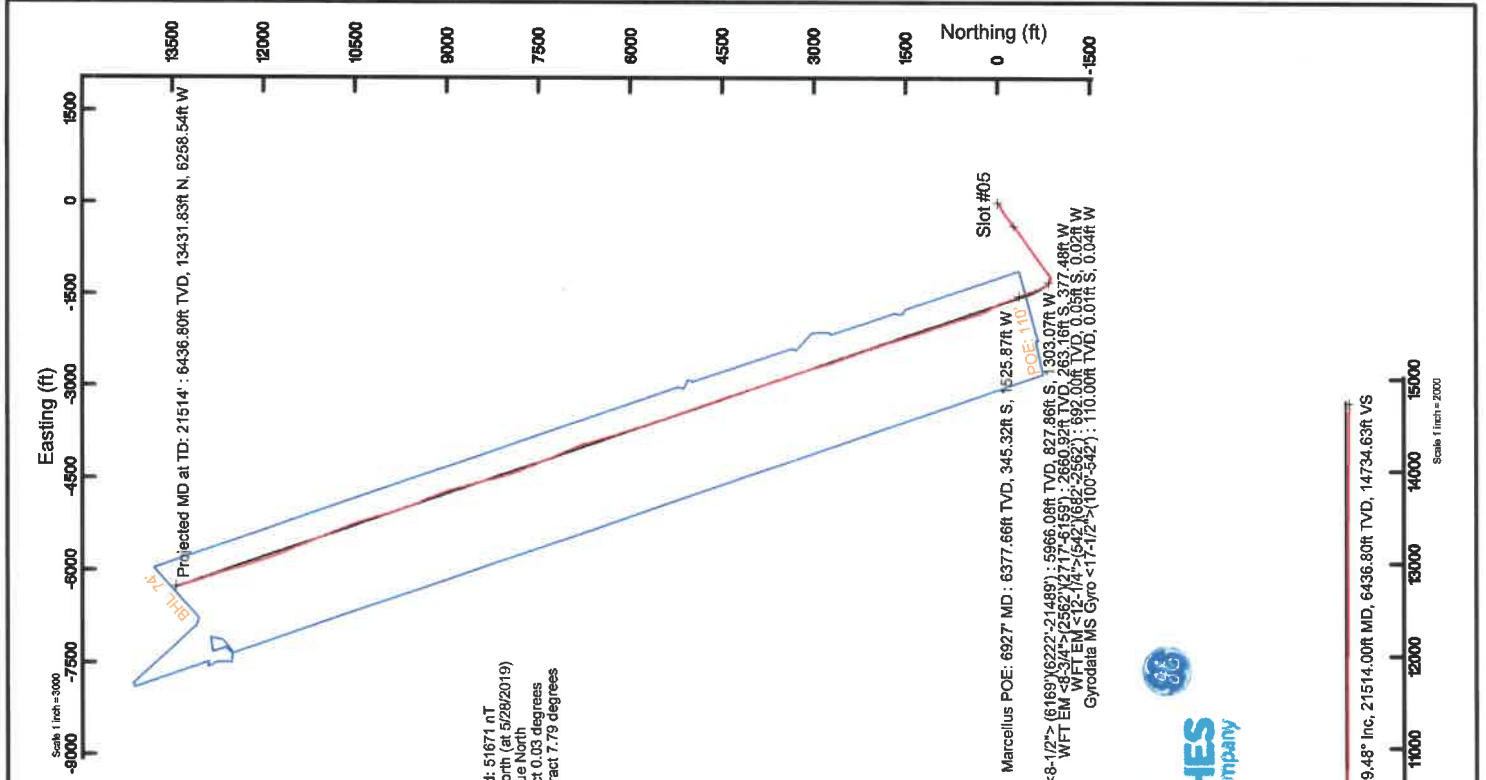
Marcellus POE: 6927 MD : 6377.66R TVD, 345.32R S, 1625.87R W

BH AT Curve <8-1/2">(6169)(6222-21489) : 5966.08R TVD, 827.66R S, 1303.07R W

WFT EM <8-3/4">(262)(262-8159) : 2660.92R TVD, 263.16R S, 377.48R W

WFT EM <12-1/4">(542)(682-2562) : 692.00R TVD, 0.05R S, 0.02R W

Gyrodata MS Gyro <17-1/2">(100-542) : 110.00R TVD, 0.01R S, 0.04R W

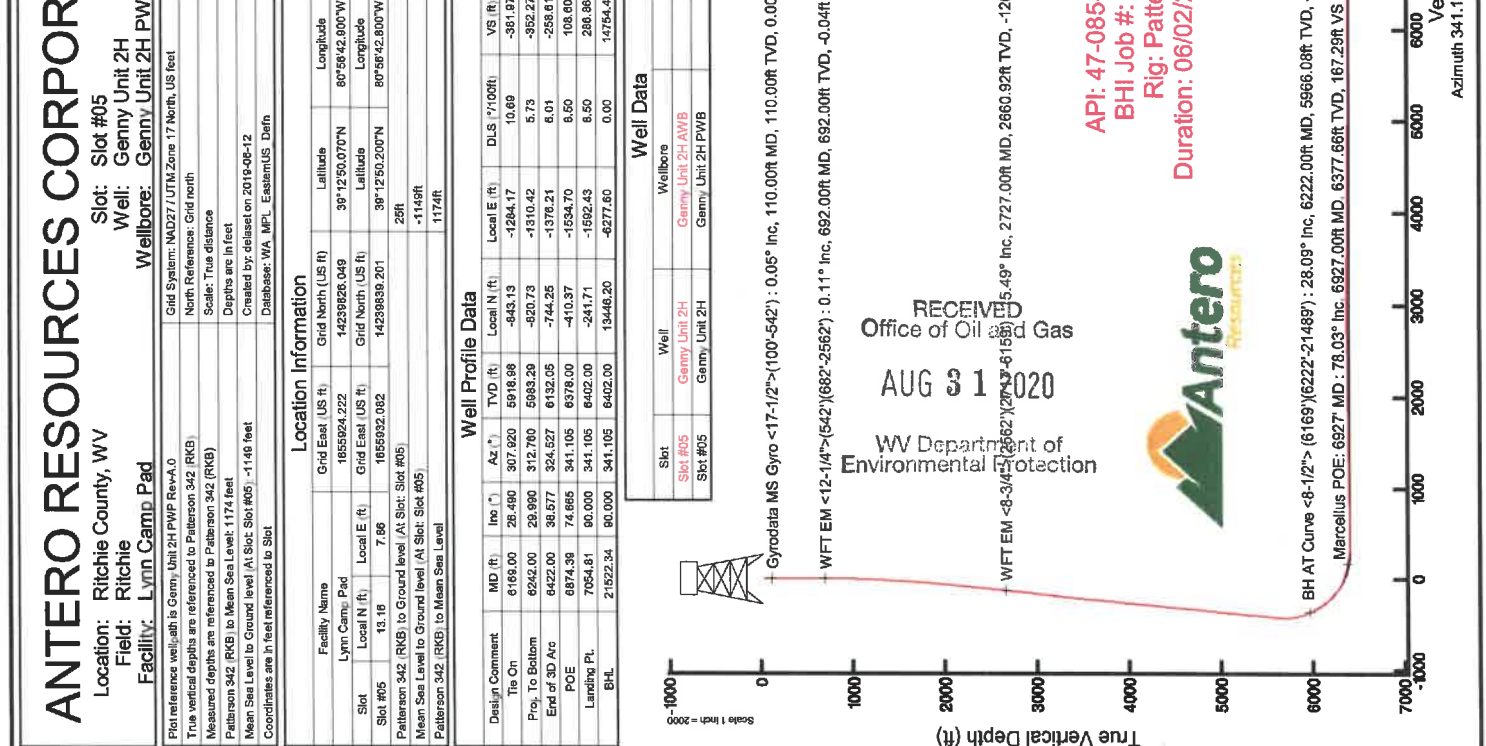


User specified (HDGM) Dip: 66.21° Field: 51671 nT
 Magnetic North is 7.76 degrees West of True North (at 5/28/2019)
 Grid North is 0.03 degrees East of True North
 To correct azimuth from True to Grid subtract 0.03 degrees
 To correct azimuth from Magnetic to Grid subtract 7.79 degrees

API: 47-085-10383-0000
 BH Job #: 109831200
 Rig: Patterson 342
 Duration: 06/02/2019-06/07/2019

Antero Resources logo and Baker Hughes logo.

RECEIVED Office of Oil and Gas AUG 31 2020 WV Department of Environmental Protection



Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/31/2020
Job End Date:	2/20/2020
State:	West Virginia
County:	Ritchie
API Number:	47-085-10383-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Genny 2H
Latitude:	39.21394440
Longitude:	-80.94522200
Datum:	NAD83
Federal Well:	NO
Indian Well:	YES
True Vertical Depth:	6,435
Total Base Water Volume (gal):	22,603,101
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	Supplied by Operator	Base Fluid					
			Water	7732-18-5	100.00000	86.41381	
SaniFrac 8123	CWS	Microbiocide					
				Listed Below			

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of Environmental Protection

CI-9100G	CWS	Corrosion Inhibitor											
						Listed Below							
DWP-641	CWS	Friction Reducer											
						Listed Below							
CalGel 4000	CWS	Gel Slurry											
						Listed Below							
Hydrochloric Acid	CWS	Clean Perforations											
						Listed Below							
Calbreak 5501	CWS	Breaker											
						Listed Below							
Sand (Proppant)	CWS	Propping Agent											
						Listed Below							
Other Chemical (s)	Listed Above	See Trade Name (s) List											
						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	13.23098					
					Illite	12173-60-3	1.00000	0.13230					
					Hydrochloric acid	7647-01-0	37.00000	0.11097					
					Polymer	26100-47-0	45.00000	0.01815					
					Ilmenite	98072-94-7	0.10000	0.01323					

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of Environmental Protection

				Apatite	64476-38-6	0.10000	0.01323
				Goethite	1310-14-1	0.10000	0.01323
				Biotite	1302-27-8	0.10000	0.01323
				Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.01210
				Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.00799
				Guar gum	9000-30-0	60.00000	0.00799
				Ammonium chloride	12125-02-9	11.00000	0.00444
				Glutaraldehyde	111-30-8	14.00000	0.00163
				Sorbitan monooleate	1338-43-8	4.00000	0.00161
				Polyethylene glycol monooleate	9004-96-0	3.00000	0.00121
				Sorbitol tetraoleate	61723-83-9	2.00000	0.00081
				Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00067
				Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00040
				Alkyl dimethyl benzyl ammonium chloride	68424-85-1	3.00000	0.00035
				Ethanol	64-17-5	3.00000	0.00035
				Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00035
				Ammonium Persulfate	7727-54-0	100.00000	0.00030
				Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.50000	0.00020
				Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00020
				Ethylene Glycol	107-21-1	40.00000	0.00006
				Vinylidene chloride-methyl acrylate copolymer	25038-72-6	20.00000	0.00006
				Acrylamide	79-06-1	0.10000	0.00004

RECEIVED
Office of Oil and Gas
AUG 31 2020
W.D. Department of
Environmental Protection

				Diethylene glycol, monomethyl ether	34590-94-8	20.00000	0.00003
				Formic acid	64-18-6	10.00000	0.00002
				Tar bases, quinolone derivs, benzyl chloride- quaternized	72480-70-7	10.00000	0.00002
				Ethoxylated Alcohols	68131-39-5	10.00000	0.00002
				Cinnamaldehyde	104-55-2	10.00000	0.00002
				Isopropyl alcohol	67-63-0	5.00000	0.00001

* 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)

RECEIVED
 Office of Oil and Gas
 AUG 31 2020
 WV Department of
 Environmental Protection

LATITUDE 39°15'00"

8,091'

2,542' TO BOTTOM HOLE

LATITUDE 39°17'30"

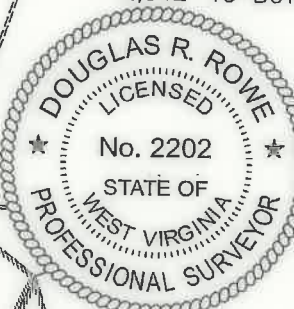
LONGITUDE 80°57'30"

13,133'

14,874' TO BOTTOM HOLE

LONGITUDE 80°55'00"

Antero Resources Corporation
Well No. Genny Unit 2H



PAD LAYOUT



AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 263,327ft E: 1,590,519ft
LAT: 39°12'50.20" LON: 80°56'42.80"
BOTTOM HOLE INFORMATION:
N: 276,861ft E: 1,584,486ft
LAT: 39°15'02.99" LON: 80°58'02.25"
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: 4,340,529m E: 504,744m
BOTTOM HOLE INFORMATION:
N: 4,344,621m E: 502,837m

NOTE:
2 WATER WELLS WERE LOCATED WITHIN 2000' OF THE CENTER OF PAD



Clay	District - Ritchie County
30-15	Joseph Wilson
30-26	Joseph Wilson
30-26.2	Joseph Wilson
30-27	Joseph Wilson
30-39	Susie Perkins
30-40	Susie Perkins
30-41	Ray Taylor
30-42	Joseph Wilson
35-04	E L F LLC
35-05	E L F LLC
35-5.1	Emmalyne Collins
35-5.2	E L F LLC
35-11	Kevin Baker
35-11.1	Kevin Baker
35-11.2	Kevin Baker
35-12	E L F LLC
35-22	Kevin Baker
35-25	Lyle Freeland
35-26	Donald McCray
35-27	Kevin Headley
35-28	Bryan Taylor
35-35	H. L. Jones
35-36	H. L. Jones
35-37	W. B. Houe
35-41	Howard Hornish
35-46	Gregory Dodd
35-46.1	Duane Riggs
35-47	James Wilson
36-25	EQM Gatherings OPCO LLC
36-25.1	EQM Gatherings OPCO LLC
39-08	Duane Riggs
39-09	Howard Hornish
40-01	Michael Sammons
40-02	Scott Williams
40-03	Tommy Postlethwait
40-07	James Masters
40-08	Terry Lee Richards
40-09	Terry Lee Richards
40-11	Terry Skinner
40-12	Tommy Postlethwait
40-13	Tommy Postlethwait
40-14	Duane Riggs

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 # 16-033WA
DRAWING # GENNY2HAD
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 +/-
O - - - - - Proposed Well Path
O - - - - - Drilled Well Path
DOUGLAS R. ROWE P.S. 2202
DATE 06/04/20
OPERATOR'S WELL # GENNY 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 ANTERO RESOURCES CORPORATION.
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 LIQUID INJECTION WASTE DISPOSAL 47 085 10383
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW x
LOCATION: ELEVATION 1,149' AS BUILT WATERSHED NORTH FORK HUGHES RIVER QUADRANGLE PULLMAN 7.5' (SHL) PENNSBORO 7.5' (BHL)
SURFACE OWNER TERRY LEE RICHARDS ACREAGE 60 ACRES +/- DISTRICT CLAY COUNTY RITCHIE
OIL & GAS ROYALTY OWNER LORETTA K. CLARK BARE ET AL; MILES H. LAMM ET UX; IRA J. LAMM ET AL; LEASE ACREAGE 60 AC±; 44 AC±; 38 AC±
STEPHEN LENTZ SR. ET UX; WANEMA RIGGS ET VIR; DONALD LEA ET AL; THOMAS G. BEE ET UX; ALMARINE HOGUE; 7.35 AC±; 23.5 AC±; 40.625 AC±; 63.19 AC±; 90 AC±
MARY HOLLAND ET VIR; GROVER C. TAYLOR ET AL; LENA R. CARR ET AL; C. A. WILSON ET AL; DALE WEEKELY ET AL 200 AC±; 577 AC±; 163 AC±; 178 AC±; 140 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 6,439' TVD 21,514' MD
WELL OPERATOR ANTERO RESOURCES CORP DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

LATITUDE 39°15'00"

8,091'

2,542' TO BOTTOM HOLE

LATITUDE 39°17'30"

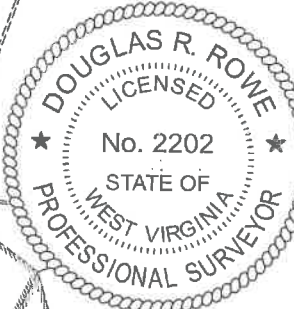
LONGITUDE 80°57'30"

14,874' TO BOTTOM HOLE

13,133'

LONGITUDE 80°55'00"

Antero Resources Corporation
Well No. Genny Unit 2H



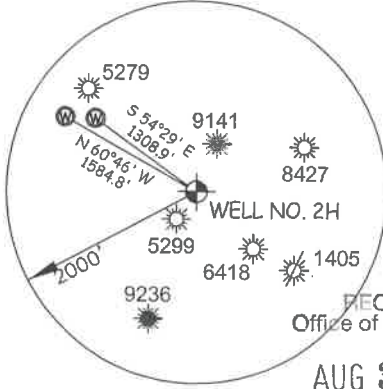
PAD LAYOUT



AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 263,327ft E: 1,590,519ft
LAT: 39°12'50.20" LON: 80°56'42.80"
BOTTOM HOLE INFORMATION:
N: 276,861ft E: 1,584,486ft
LAT: 39°15'02.99" LON: 80°58'02.25"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIANGLE 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: 4,340,529m E: 504,744m
BOTTOM HOLE INFORMATION:
N: 4,344,621m E: 502,837m

NOTE:
2 WATER WELLS WERE LOCATED WITHIN 2000' OF THE CENTER OF PAD



Clay District - Ritchie County

30-15	Joseph Wilson
30-26	Joseph Wilson
30-26.2	Joseph Wilson
30-27	Josenh Wilson
30-39	Susie Perkins
30-40	Susie Perkins
30-41	Ray Taylor
30-42	Joseph Wilson
35-04	E L F LLC
35-05	E L F LLC
35-51	Emmagene Collins
35-52	E L F LLC
35-11	Kevin Baker
35-11.1	Kevin Baker
35-11.2	Kevin Baker
35-12	E L F LLC
35-22	Kevin Baker
35-25	Lyle Freeland
35-26	Donald McCray
35-27	Kevin Headley
35-28	Bryan Taylor
35-35	H. L. Jones
35-36	H. L. Jones
35-37	W. B. Hoque
35-41	Howard Hornish
35-46	Gregory Dodd
35-46.1	Duane Riggs
35-47	James Wilson
36-25	EQM Gatherings OPCO LLC
36-25.1	EQM Gatherings OPCO LLC
39-08	Duane Riggs
39-09	Howard Hornish
40-01	Michael Sammons
40-02	Scott Williams
40-03	Tommy Postlethwait
40-07	James Masters
40-08	Terry Lee Richards
40-09	Terry Lee Richards
40-11	Terry Skinner
40-12	Tommy Postlethwait
40-13	Tommy Postlethwait
40-14	Duane Riggs

RECEIVED
Office of Oil and Gas
AUG 31 2020
WV Department of Environmental Protection

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 # 16-033WA
DRAWING # GENNY2HAD
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 +/-
○ - - - - - Proposed Well Path
○ - - - - - As Drilled Well Path
DOUGLAS R. ROWE P.S. 2202
DATE 06/04/20
OPERATOR'S WELL # GENNY 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 ANTERO RESOURCES CORPORATION.
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 47 085 10383
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,149' AS BUILT WATERSHED NORTH FORK HUGHES RIVER QUADRANGLE PULLMAN 7.5' (SHL) PENNSBORO 7.5' (BHL) STATE COUNTY PERMIT
SURFACE OWNER TERRY LEE RICHARDS ACREAGE 60 ACRES +/- DISTRICT CLAY COUNTY RITCHIE
OIL & GAS ROYALTY OWNER LORETTA K. CLARK BARE ET AL; MILES H. LAMM ET UX; IRA J. LAMM ET AL; LEASE ACREAGE 60 AC±; 44 AC±; 38 AC±; COUNTY NAME PERMIT
STEPHEN LENTZ SR. ET UX; WANEMA RIGGS ET VIR; DONALD LEA ET AL; THOMAS G. BEE ET UX; ALMARINE HOGUE; 7.35 AC±; 23.5 AC±; 40.625 AC±; 63.19 AC±; 90 AC±;
MARY HOLLAND ET VIR; GROVER C. TAYLOR ET AL; LENA R. CARR ET AL; C. A. WILSON ET AL; DALE WEEKELY ET AL 200 AC±; 577 AC±; 163 AC±; 178 AC±; 140 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 6,439' TVD 21,514' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313