

Reviewed

John C. ... 5/9/18

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

RECEIVED
Office of Oil and Gas

APR 30 2018

WV Department of
Environmental Protection

API 47 - 017 - 06780 County Doddridge District Central
Quad West Union 7.5' Pad Name Long Run Pad Field/Pool Name -----
Farm name Richard F. McCullough, et al Well Number Janice 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 4350133m Easting 511737m
Landing Point of Curve Northing 4350339.27m Easting 511454.27m
Bottom Hole Northing 4352273m Easting 510845m

Elevation (ft) 1021' 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 10/25/2016 Date drilling commenced 12/16/2016 Date drilling ceased 3/21/2017
Date completion activities began 6/18/2017 Date completion activities ceased 10/28/2017
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 53' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 884' Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

06/01/2018

API 47-017 - 06780 Farm name Richard F. McCullough, et al Well number Janice Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	65'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	537'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2548'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	13880'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6390'		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	102 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	503 sx	15.6	1.19	599	0'	8 Hrs.
Coal							
Intermediate 1	Class A	918 sx	15.6	1.18	1083	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	750 sx (Lead) 1054 sx (Tail)	13.37 (Lead), 15.19 (Tail)	1.44 (Lead), N/A (Tail)	1080	-500' Into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 13880' MD, 6452' TVD (BHL), 6465' (Deepest Point Drilled) Loggers TD (ft) 13880' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6048'

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 - 06780 Farm name Richard F. McCullough, et al Well number Janice Unit 1H

PERFORATION RECORD

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

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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

Please insert additional pages as applicable.

API 47- 017 - 06780 Farm name Richard F. McCullough, et al Well number Janice Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6431' (TOP)</u> TVD	<u>6670' (TOP)</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3100 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 12149 mcfpd Oil 59 bpd NGL --- bpd Water 1 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

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

Logging Company Pro Oil & Gas Services LLC
Address 3035 Lynnwood Drive City Hermitage State PA Zip 16148

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

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

Please insert additional pages as applicable.

Completed by Mallory Stanton Telephone 303-357-7182
Signature _____ Title Permitting Supervisor Date 4/27/2018

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

API 47-017-06780 Farm Name Richard F. McCullough et al Well Number Janice Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/20/2017	13606	13777	60	Marcellus
2	8/21/2017	13402	13574	60	Marcellus
3	8/22/2017	13199	13371	60	Marcellus
4	8/22/2017	12996	13167	60	Marcellus
5	8/23/2017	12792	12964	60	Marcellus
6	8/24/2017	12589	12760	60	Marcellus
7	8/25/2017	12385	12557	60	Marcellus
8	8/25/2017	12182	12354	60	Marcellus
9	8/26/2017	11979	12150	60	Marcellus
10	8/26/2017	11775	11947	60	Marcellus
11	8/27/2017	11572	11743	60	Marcellus
12	8/27/2017	11368	11540	60	Marcellus
13	8/28/2017	11165	11337	60	Marcellus
14	8/28/2017	10962	11133	60	Marcellus
15	8/29/2017	10758	10930	60	Marcellus
16	8/30/2017	10555	10726	60	Marcellus
17	8/31/2017	10351	10523	60	Marcellus
18	8/31/2017	10148	10320	60	Marcellus
19	9/1/2017	9945	10116	60	Marcellus
20	9/1/2017	9741	9913	60	Marcellus
21	9/2/2017	9538	9709	60	Marcellus
22	9/2/2017	9334	9506	60	Marcellus
23	9/3/2017	9131	9303	60	Marcellus
24	9/3/2017	8928	9099	60	Marcellus
25	9/4/2017	8724	8896	60	Marcellus
26	9/4/2017	8521	8692	60	Marcellus
27	9/5/2017	8317	8489	60	Marcellus
28	9/5/2017	8114	8286	60	Marcellus
29	9/6/2017	7911	8082	60	Marcellus
30	9/6/2017	7707	7879	60	Marcellus
31	9/7/2017	7504	7675	60	Marcellus
32	9/8/2017	7300	7472	60	Marcellus
33	9/8/2017	7097	7269	60	Marcellus
34	9/9/2017	6894	7065	60	Marcellus
35	9/9/2017	6690	6862	60	Marcellus

06/01/2018

API 47-017-06780 Farm Name Richard F. McCullough et al Well Number Janice 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	8/20/2017	40.2	7447	8562	3914	412500	9533	N/A
2	8/21/2017	67.7	7904	6470	5147	412850	12046	N/A
3	8/22/2017	75	7557	6367	3684	414050	8971	N/A
4	8/22/2017	73.5	8105	6164	5506	137450	8376	N/A
5	8/23/2017	79.7	7208	5668	4489	412700	8912	N/A
6	8/24/2017	73.8	7265	6194	3414	412900	8958	N/A
7	8/25/2017	15.7	8296	6571	5303	12500	10430	N/A
8	8/25/2017	74.7	7267	6539	3865	413100	9094	N/A
9	8/26/2017	79.1	7228	7220	3489	412450	8913	N/A
10	8/26/2017	73.3	7088	5884	3712	412600	9070	N/A
11	8/27/2017	79.8	7207	7111	3491	412900	8882	N/A
12	8/27/2017	79	7104	5719	3643	412650	8964	N/A
13	8/28/2017	76.3	7449	7503	3710	412850	9759	N/A
14	8/28/2017	80	7211	7309	3453	412450	8917	N/A
15	8/29/2017	81.4	7217	7074	3508	413800	8654	N/A
16	8/30/2017	64.9	7794	7030	7025	255100	8624	N/A
17	8/31/2017	77.3	6882	6213	4747	413000	8462	N/A
18	8/31/2017	76.3	6932	6422	4895	413600	9657	N/A
19	9/1/2017	77.2	6972	6328	4441	413250	8593	N/A
20	9/1/2017	73.2	6665	5970	3506	414800	8546	N/A
21	9/2/2017	71.5	7034	6375	3314	413350	8639	N/A
22	9/2/2017	74.6	6581	6177	3662	413400	8623	N/A
23	9/3/2017	76	6668	6574	3511	414000	8546	N/A
24	9/3/2017	77.4	6662	6285	3458	414100	8637	N/A
25	9/4/2017	74.9	6325	6315	3521	412450	8477	N/A
26	9/4/2017	75.8	6435	6644	3609	413600	8672	N/A
27	9/5/2017	76.9	6528	5846	3790	412600	8457	N/A
28	9/5/2017	78.7	6928	6338	3881	413000	8470	N/A
29	9/6/2017	77.2	6561	6161	3874	415700	8652	N/A
30	9/6/2017	74.7	6161	6111	3823	412600	8425	N/A
31	9/7/2017	77.7	6252	6476	3980	412600	8238	N/A
32	9/8/2017	76.6	6374	6858	4011	412150	8428	N/A
33	9/8/2017	76	6333	5943	4098	413050	8424	N/A
34	9/9/2017	79.2	6437	6373	4101	412850	8434	
35	9/9/2017	79.3	6306	5729	4938	412700	8368	
	AVG=	72.8	7,041	6,515	4,043	12,387,050	285,625	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	53'	N/A	N/A	N/A
Sandy siltstone	0	80	0	80
Silty sandstone	80	120	67	120
Sandy siltstone	120	400	107	400
Silty sandstone (tr coal)	400	600	387	600
Sandy shale	600	640	587	640
Silty limestone	640	720	627	720
Silty shale	720	800	707	800
Siltstone	800	880	787	880
Sandstone	880	960	867	960
Shaly sandstone	960	1,080	947	1,080
Silty sandstone (tr coal)	1,080	1,280	1,067	1,280
Silty shale	1,280	1,520	1,267	1,520
Sandy shale (tr coal)	1,520	1,690	1,507	1,690
Shaly sandstone	1,690	1,740	1,677	1,740
Silty shale	1,740	1,964	1,727	1,959
Big Lime	1,964	2,648	1,959	2,649
Fifty Foot Sandstone	2,648	2,750	2,649	2,751
Gordon	2,750	3,243	2,751	3,244
Fifth Sandstone	3,243	3,288	3,244	3,289
Bayard	3,288	3,782	3,289	3,786
Speechley	3,782	4,056	3,786	4,065
Baltown	4,056	4,577	4,065	4,597
Bradford	4,577	4,920	4,597	4,948
Benson	4,920	5,234	4,948	5,269
Alexander	5,234	6,088	5,269	5,800
Rhinestreet	6,088	6,088	5,800	6,152
Sycamore	6,088	6,250	6,128	6,344
Middlesex	6,250	6,371	6,320	6,532
Burkett	6,371	6,400	6,508	6,592
Tully	6,400	6,431	6,568	6,670
Marcellus	6,431	NA	6,646	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:	8/20/2017
Job End Date:	9/9/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06780-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Janice Unit 1H
Latitude:	39.30050000
Longitude:	-80.86387800
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,453
Total Base Water Volume (gal):	13,376,761
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	70.00000	88.71410	
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			

SANIFRAC 8844	CWS	Biocide																	
									Listed Below										
DWP-111	CWS	Gel Slurry																	
									Listed Below										
DWP-641	CWS	Friction Reducer																	
									Listed Below										
Hydrochloric Acid	CWS	Clean Perforations																	
									Listed Below										
DAP-902	CWS	Scale Inhibitor																	
									Listed Below										
CI-9100G	CWS	Corrosion Inhibitor																	
									Listed Below										
Calbreak 5501	CWS	Breaker																	
									Listed Below										
DAP-103	CWS	Iron Control																	
									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	10.84045
					Hydrochloric acid	7647-01-0	37.00000	0.08570
					Calcite	471-34-1	1.00000	0.08266
					Guar gum	9000-30-0	60.00000	0.05772
					Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.05772
					Polymer	26100-47-0	45.00000	0.02672
					Illite	12173-60-3	1.00000	0.02569
					Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.01782
					Ammonium Persulfate	64742-47-8	100.00000	0.01574
					Biotite	1302-27-8	0.10000	0.01084
					Goethite	1310-14-1	0.10000	0.01084
					Apatite	64476-38-6	0.10000	0.01084
					Ammonium chloride	12125-02-9	11.00000	0.00653
					Polyethylene glycol mixture	25322-68-3	54.50000	0.00647
					2-Propenoic acid, homopolymer, sodium salt	9003-04-7	40.00000	0.00624
					Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00481
					Vinylidene chloride-methyl acrylate copolymer	69418-26-4	20.00000	0.00315
					Ilmenite	98072-94-7	0.10000	0.00257
					Sorbitan monooleate	1338-43-8	4.00000	0.00238
					2,2-Dibromo-3-Nitropropionamide	10222-01-2	20.00000	0.00237
					Polyethylene glycol monooleate	9004-96-0	3.00000	0.00178

				1,2-Propanediol	57-55-6	10.00000	0.00156	
				Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00144	
				Sorbitol tetraoleate	61723-83-9	2.00000	0.00119	
				Citric acid	77-92-9	60.00000	0.00078	
				Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00059	
				Sodium bromide	7647-15-6	4.00000	0.00047	
				Dibromoacetonitrile	3252-43-5	3.00000	0.00036	
				Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.50000	0.00030	
				Acrylamide	79-06-1	0.10000	0.00006	
				Ethylene glycol	107-21-1	40.00000	0.00005	
				Diethylene glycol (mono) methyl ether	34590-94-8	20.00000	0.00002	
				Isopropanol	67-63-0	5.00000	0.00001	
				Ethoxylated alcohols	Proprietary	10.00000	0.00001	Proprietary CAS
				Tar bases, quinolone derivs	68513-87-1	1.00000	0.00001	
				Diethylene glycol	111-46-6	1.00000	0.00001	
				Cinnamaldehyde	104-55-2	10.00000	0.00001	
				Tar bases, quinolone derivs, benzyl chloride- quaternized	72480-70-7	10.00000	0.00001	
				Formic Acid	64-18-6	10.00000	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 19.10.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°20'00"

8,692'

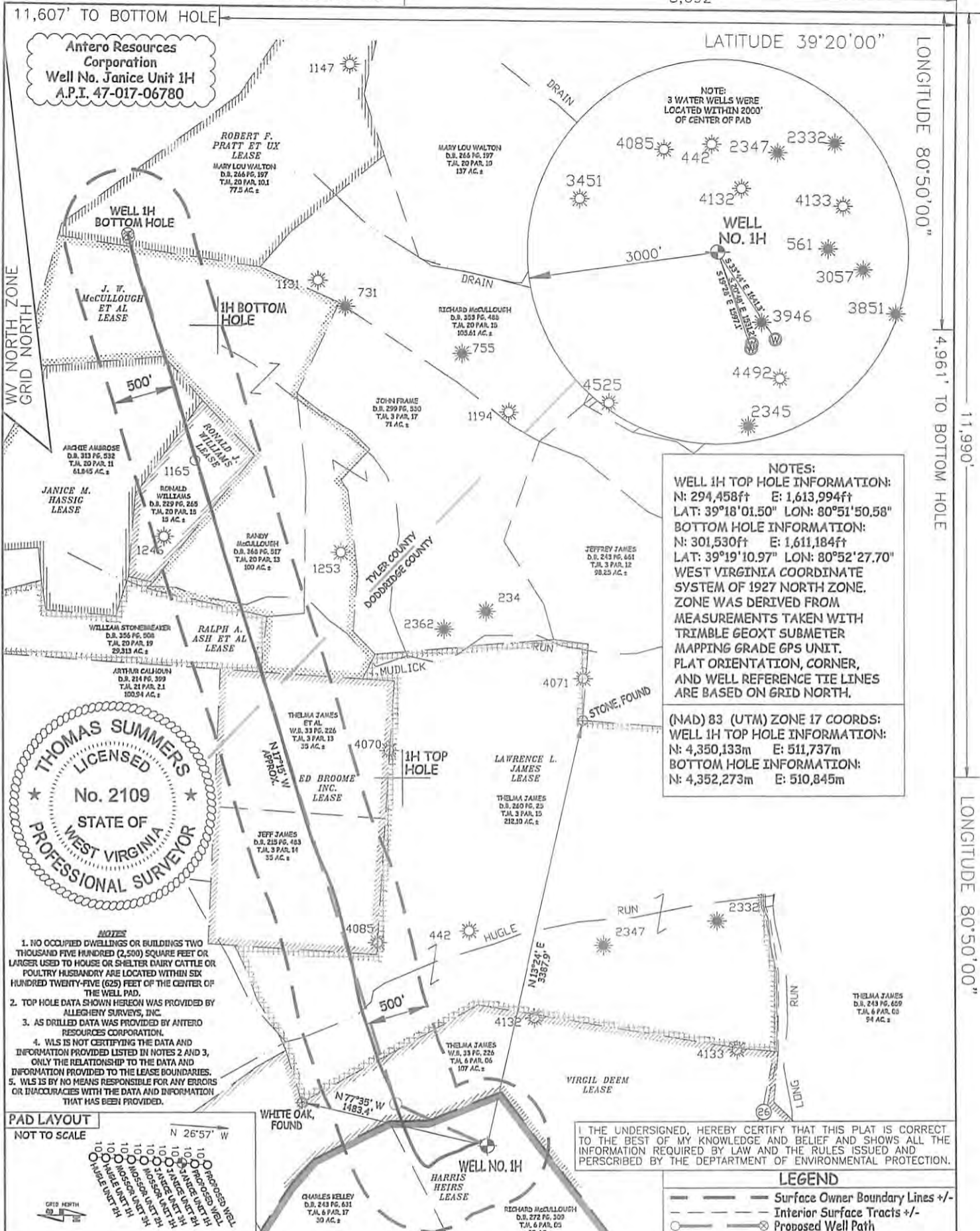
LATITUDE 39°20'00"

LONGITUDE 80°50'00"

4,961' TO BOTTOM HOLE

11,990'

LONGITUDE 80°50'00"

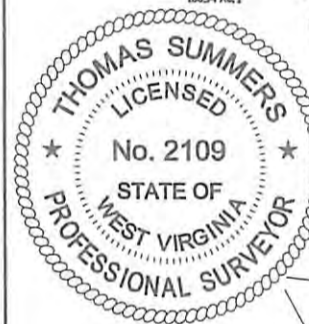


Antero Resources Corporation
Well No. Janice Unit 1H
A.P.I. 47-017-06780

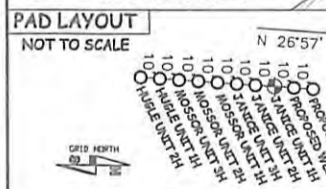


NOTES:
WELL 1H TOP HOLE INFORMATION:
 N: 294,458ft E: 1,613,994ft
BOTTOM HOLE INFORMATION:
 N: 301,530ft E: 1,611,184ft
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
 N: 4,350,133m E: 511,737m
BOTTOM HOLE INFORMATION:
 N: 4,352,273m E: 510,845m



- NOTES**
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.



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.

LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- Proposed Well Path
- ⊗ As Drilled Well Path

JOB # 16-038WA
 DRAWING # JANICE1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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
 THOMAS SUMMERS P.S. 2109

DATE 01/24/18

OPERATOR'S WELL # JANICE UNIT #1H

API WELL # 47 - 017 - 06780

STATE COUNTY PERMIT

STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,021' - AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIEGE
 SURFACE OWNER RICHARD F. McCULLOUGH ACREAGE 39 ACRES +/-
 OIL & GAS ROYALTY OWNER HARRIS HEIRS; VIRGIL DEEM; LAWRENCE L. JAMES; ED BROOME INC.; RALPH A. ASH ET AL; J. W. McCULLOUGH ET AL; RONALD J. WILLIAMS; JANICE M. HASSIG; ROBERT F. PRATT ET UX LEASE ACREAGE 217 AC±; 107 AC±; 215 AC±; 70 AC±; 30 AC±; 99.5 AC±; 15 AC±; 53 AC±; 77.5 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 6,452' TVD 13,880' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

06/01/2018

COUNTY NAME PERMIT

LATITUDE 39°20'00"

8,692'

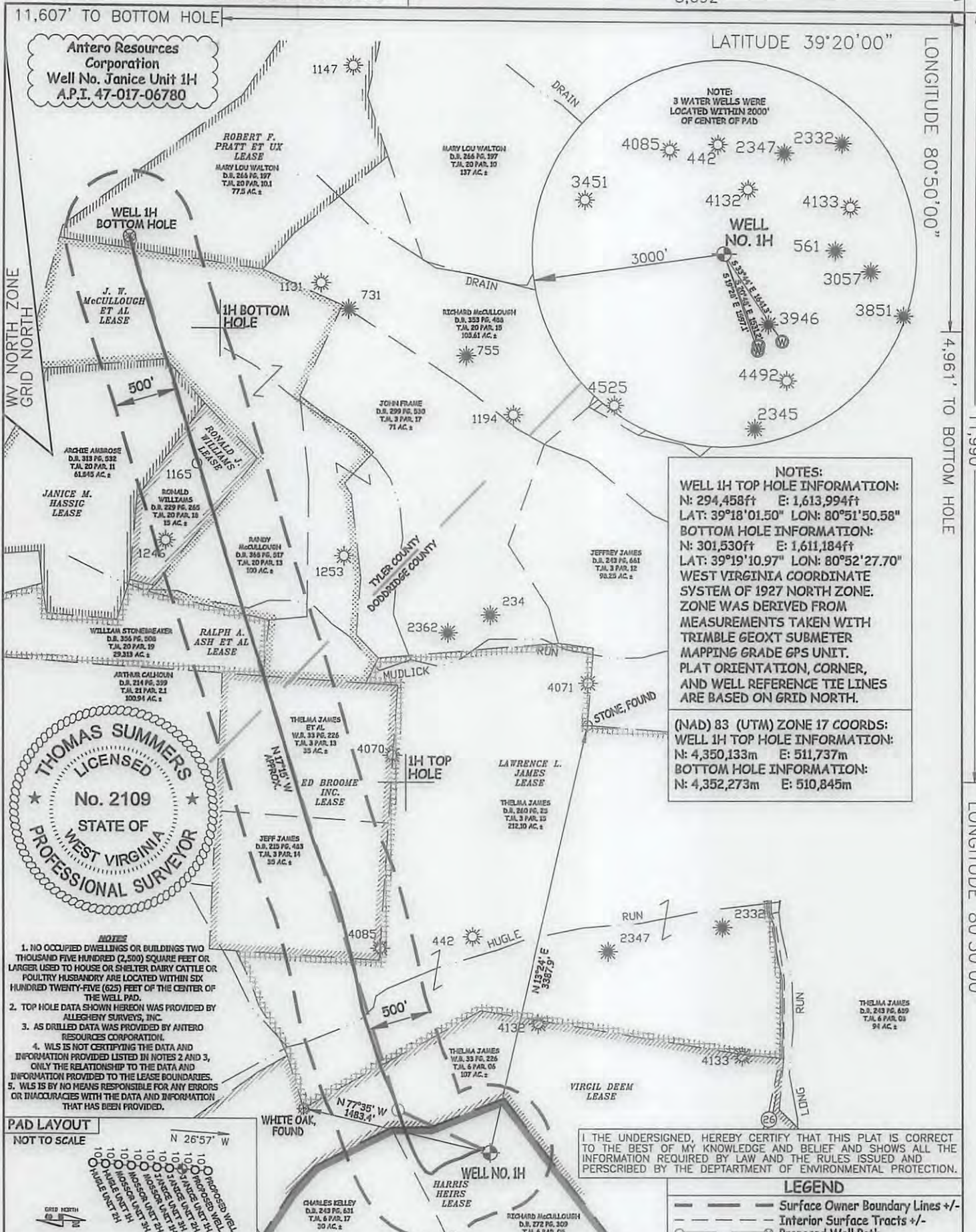
LATITUDE 39°20'00"

LONGITUDE 80°50'00"

4,961' TO BOTTOM HOLE

11,990'

LONGITUDE 80°50'00"



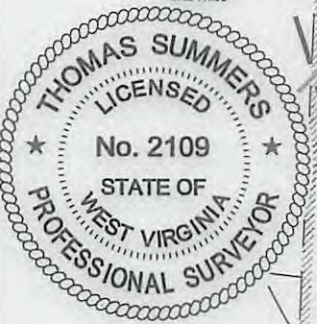
NOTES:
 3 WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD

WELL 1H TOP HOLE INFORMATION:
 N: 294,458ft E: 1,613,994ft
 LAT: 39°18'01.50" LON: 80°51'50.58"

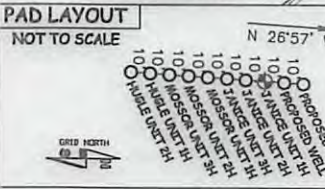
BOTTOM HOLE INFORMATION:
 N: 301,530ft E: 1,611,184ft
 LAT: 39°19'10.97" LON: 80°52'27.70"

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: 4,350,133m E: 511,737m
BOTTOM HOLE INFORMATION:
 N: 4,352,273m E: 510,845m



- NOTES:**
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.



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.

LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- Proposed Well Path
- ⊗ As Drilled Well Path

Thomas Summers
 THOMAS SUMMERS P.S. 2109

DATE 01/24/18

OPERATOR'S WELL # JANICE UNIT #1H

API WELL # 47 - 017 - 06780

STATE COUNTY PERMIT

JOB # 16-038WA
 DRAWING # JANICE1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,021' - AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE

SURFACE OWNER RICHARD F. McCULLOUGH ACREAGE 39 ACRES +/-

OIL & GAS ROYALTY OWNER HARRIS HEIRS; VIRGIL DEEM; LAWRENCE L. JAMES; ED BROOME INC.; RALPH A. ASH ET AL; J. W. McCULLOUGH ET AL; RONALD J. WILLIAMS; JANICE M. HASSIG; ROBERT F. PRATT ET UX LEASE ACREAGE 217 AC±; 107 AC±; 215 AC±; 70 AC±; 30 AC±; 90.5 AC±; 15 AC±; 53 AC±; 77.5 AC±

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