

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

API 47-017-06873 County Doddridge District West Union
Quad Smithburg 7.5' Pad Name Deets Pad Field/Pool Name ----
Farm name Mary E. Deets and/or Paul A. Smith Well Number Callahan 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 4351726m Easting 523688m
Landing Point of Curve Northing 4351750.85m Easting 524200.74m
Bottom Hole Northing 4349107m Easting 525125m

Elevation (ft) 1376' 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 12/21/2018 Date drilling commenced 5/4/2019 Date drilling ceased 9/6/2019
Date completion activities began 11/10/2019 Date completion activities ceased 1/9/2020
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 196', 221' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1381', 1843', 1966' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 583', 891' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
Subaru
6/5/2020

API 47-017 - 06873 Farm name Mary E. Deets and/or Paul A. Smith Well number Callahan 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"	106'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	388'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2586'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17094'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7543'		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	120	0'	8 Hrs.
Surface	Class A	400 sx	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1005 sx	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	730 sx (Lead) 2500 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.40 (Lead), 1.26 (Tail)		-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17113' MD, 7099' TVD (BHL), 7100' (Deepest Point Drilled) Loggers TD (ft) 17113' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6800'

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 - 06873 Farm name Mary E. Deets and/or Paul A. Smith Well number Callahan Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	7078' (TOP)	TVD	7582' (TOP) MD

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 13451 mcfpd Oil 39 bpd NGL --- bpd Water 1277 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**

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 KLX Energy Services
Address 3040 Post Oak Boulevard City Houston State TX Zip 77056

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 Megan Griffith Telephone 303-357-7223
Signature _____ Title Permitting Agent Date _____

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	11/10/2019	16985.7	16943.4	60	Marcellus
2	11/11/2019	16905.48	16738.88	60	Marcellus
3	11/11/2019	16703.16	16536.56	60	Marcellus
4	11/11/2019	16500.84	16334.24	60	Marcellus
5	11/12/2019	16298.52	16131.92	60	Marcellus
6	11/12/2019	16096.2	15929.6	60	Marcellus
7	11/13/2019	15893.88	15727.28	60	Marcellus
8	11/14/2019	15691.56	15524.96	60	Marcellus
9	11/14/2019	15489.24	15322.64	60	Marcellus
10	11/15/2019	15286.92	15120.32	60	Marcellus
11	11/15/2019	15084.6	14918	60	Marcellus
12	11/16/2019	14882.28	14715.68	60	Marcellus
13	11/16/2019	14679.96	14513.36	60	Marcellus
14	11/17/2019	14477.64	14311.04	60	Marcellus
15	11/18/2019	14275.32	14108.72	60	Marcellus
16	11/18/2019	14073	13906.4	60	Marcellus
17	11/18/2019	13870.68	13704.08	60	Marcellus
18	11/19/2019	13668.36	13501.76	60	Marcellus
19	11/19/2019	13466.04	13299.44	60	Marcellus
20	11/20/2019	13263.72	13097.12	60	Marcellus
21	11/21/2019	13061.4	12894.8	60	Marcellus
22	11/21/2019	12859.08	12692.48	60	Marcellus
23	11/22/2019	12656.76	12490.16	60	Marcellus
24	11/22/2019	12454.44	12287.84	60	Marcellus
25	11/22/2019	12252.12	12085.52	60	Marcellus
26	11/23/2019	12049.8	11883.2	60	Marcellus
27	11/23/2019	11847.48	11680.88	60	Marcellus
28	11/24/2019	11645.16	11478.56	60	Marcellus
29	11/24/2019	11442.84	11276.24	60	Marcellus
30	11/25/2019	11240.52	11073.92	60	Marcellus
31	11/25/2019	11038.2	10871.6	60	Marcellus
32	11/25/2019	10835.88	10669.28	60	Marcellus
33	11/26/2019	10633.56	10466.96	60	Marcellus
34	11/26/2019	10431.24	10264.64	60	Marcellus
35	11/26/2019	10228.92	10062.32	60	Marcellus
36	11/26/2019	10026.6	9860	60	Marcellus
37	11/27/2019	9824.28	9657.68	60	Marcellus
38	11/27/2019	9621.96	9455.36	60	Marcellus
39	11/27/2019	9419.64	9253.04	60	Marcellus
40	11/28/2019	9217.32	9050.72	60	Marcellus
41	11/28/2019	9015	8848.4	60	Marcellus
42	11/28/2019	8812.68	8646.08	60	Marcellus
43	11/29/2019	8610.36	8443.76	60	Marcellus
44	11/29/2019	8408.04	8241.44	60	Marcellus
45	11/29/2019	8205.72	8039.12	60	Marcellus
46	11/30/2019	8003.4	7836.8	60	Marcellus
47	11/30/2019	7801.08	7634.48	60	Marcellus

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	11/10/2019	77.22	7763	6552	4148	160060	4615.762	N/A
2	11/11/2019	80.62	8080	5683	4100	400400	7248.857	N/A
3	11/11/2019	81.72	8000	5615	3819	400200	7207.119	N/A
4	11/11/2019	85.93	7859	5862	4968	403080	7230.143	N/A
5	11/12/2019	87.06	8188	5552	5180	400100	7361.643	N/A
6	11/12/2019	85.12	8122	5069	3382	400100	7302	N/A
7	11/13/2019	84.45	8247	5291	4815	403940	7223.619	N/A
8	11/14/2019	94.1	8617	5691	5058	411940	7414.905	N/A
9	11/14/2019	95.35	8421	4920	4832	404160	7304.024	N/A
10	11/15/2019	94.7	8345	5966	4714	404640	7361.571	N/A
11	11/15/2019	94.12	8400	5496	4435	406860	7299	N/A
12	11/16/2019	94.39	8580	4136	4807	399200	7219.143	N/A
13	11/16/2019	94.48	8284	4929	4580	402220	7855.762	N/A
14	11/17/2019	94.69	8545	4606	4486	404880	7265.81	N/A
15	11/18/2019	94.99	7988	4749	4710	415320	7387.476	N/A
16	11/18/2019	95.17	8404	5447	4130	404460	7145.333	N/A
17	11/18/2019	94.98	8221	4285	4081	400180	7108.881	N/A
18	11/19/2019	92.43	8378	5113	4173	404000	7137.167	N/A
19	11/19/2019	95.16	8168	5489	4753	401040	7073.405	N/A
20	11/20/2019	94.41	8497	5185	4538	399870	7035.881	N/A
21	11/21/2019	87.88	8168	4707	4585	401440	7121.976	N/A
22	11/21/2019	95.52	8234	5649	4676	402620	7125.833	N/A
23	11/22/2019	97.81	8769	5074	4386	412080	7210.048	N/A
24	11/22/2019	95.14	8165	5014	4166	403120	7194.905	N/A
25	11/22/2019	94.85	8265	4980	4214	408480	7172.524	N/A
26	11/23/2019	95.27	8238	5334	4123	401500	7413.667	N/A
27	11/23/2019	98.17	8685	5224	3844	407980	7026.071	N/A
28	11/24/2019	95.63	8395	7948	3847	400000	6989.833	N/A
29	11/24/2019	96.2	8162	5223	3972	405480	7066	N/A
30	11/25/2019	94.72	8362	5427	4247	397680	7015.976	N/A
31	11/25/2019	94.31	8063	4909	4397	398820	7033.405	N/A
32	11/25/2019	94.88	8045	5282	3968	399680	7063.357	N/A
33	11/26/2019	95.97	8335	5349	3953	409910	7047.19	N/A
34	11/26/2019	95.41	8119	5062	4233	397920	6956.238	N/A
35	11/26/2019	95.69	8097	5083	4026	400360	7014.81	N/A
36	11/26/2019	94.72	8197	5460	4145	400400	6871.595	N/A
37	11/27/2019	94.22	8049	5419	4166	400160	6955.262	N/A
38	11/27/2019	84.89	7733	5395	3876	397980	6897.667	N/A
39	11/27/2019	85.05	7646	5529	3664	398640	6810.167	N/A
40	11/28/2019	84.96	7321	5312	3547	398000	6926.429	N/A
41	11/28/2019	85.25	7535	5222	3554	399220	6897.143	N/A
42	11/28/2019	84.92	7432	5405	3823	407170	7070.69	N/A
43	11/29/2019	84.31	7895	5572	3800	397100	6938.119	N/A
44	11/29/2019	85.4	7728	5619	4179	406290	7031.048	N/A
45	11/29/2019	85.17	7879	5628	4214	408445	6893.143	N/A
46	11/30/2019	84.98	7757	5263	4089	408005	6965.024	N/A
47	11/30/2019	83.7	6937	5237	3307	407360	7582.714	N/A
	AVG	91.4	8,153	5,337	4,252	17,478,680	311,647	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
Shaly Sandstone	75	135	75	135
Sandy Shale	135	195	135	195
Shaly Sandstone	195	275	195	275
Sandstone	275	315	275	315
Shaly Sandstone	315	455	315	455
Sandstone	455	535	455	535
Carbonaceous shale	535	655	535	655
Sandstone	655	875	655	875
Shaly sandstone tr coal	875	1,055	875	1,055
Shaly Siltstone	1,055	1,255	1,055	1,255
Sandstone	1,255	1,455	1,255	1,455
Sandy siltstone	1,455	1,535	1,455	1,535
Sandstone	1,535	2,141	1,535	N/A
Big Lime	2,166	2,868	2,148	2,878
Fifty Foot Sandstone	2,868	2,951	2,853	2,962
Gordon	2,951	3,248	2,937	3,265
Fifth Sandstone	3,248	3,545	3,240	3,574
Bayard	3,545	4,028	3,549	4,095
Speechley	4,028	4,427	4,070	4,524
Balltown	4,427	4,868	4,499	5,004
Bradford	4,868	5,376	4,979	5,552
Benson	5,376	5,559	5,527	5,750
Alexander	5,559	6,863	5,725	7,185
Sycamore	6,620	6,833	6,908	7,155
Middlesex	6,833	6,974	7,160	7,355
Burkett	6,974	7,007	7,360	7,413
Tully	7,007	7,078	7,418	7,582
Marcellus	7,078	NA	7,582	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.



ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV
 Field: Doddridge
 Facility: Deets Pad

Slot: Slot #04
 Well: Callahan Unit 1H
 Wellbore: Callahan Unit 1H PWB



Grid System: NAD27 / UTM Zone 17 North, US feet	
North Reference: Grid north	
Scale: True distance	
Depths are in feet	
Created by: delast on 2010-09-09	
Database: WA_MPL_EasternUS_Defn	

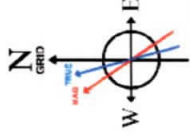
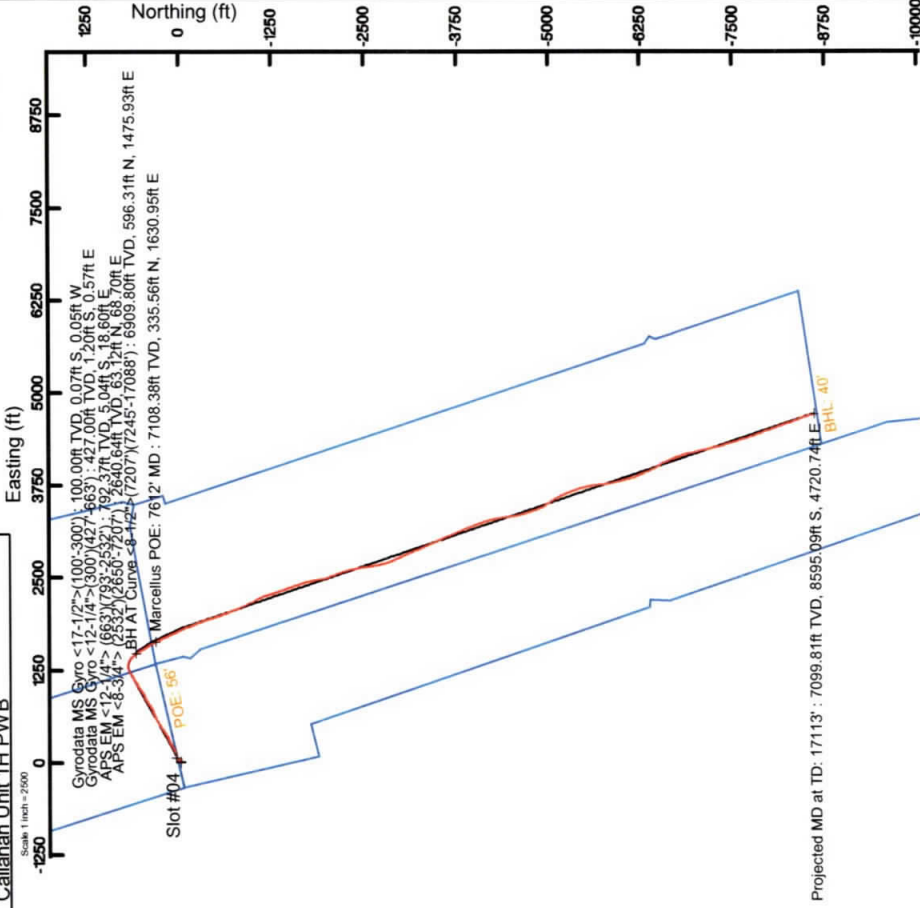
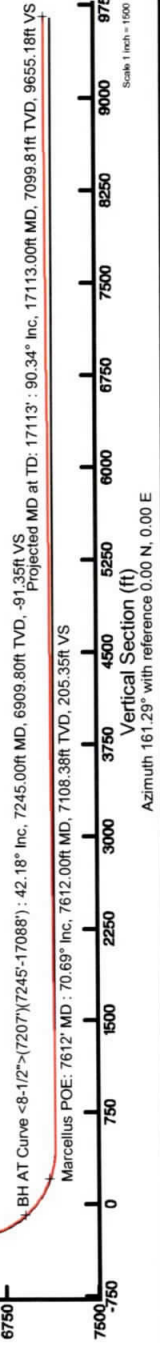
Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Deets Pad	1716002.640	14276561.990	80°43'31.460"W
Slot	Local E (ft)	Grid North (US ft)	Longitude
Slot #04	9.71	1716090.450	80°43'31.487"W
H&P 317 (RKB) to Ground level (At Slot: Slot #04)		25.5ft	
Mean Sea Level to Ground level (At Slot: Slot #04)		-1376ft	
H&P 317 (RKB) to Mean Sea Level		1401.5ft	

- Gyrodatta MS Gyro <17-1/2">(100-300') : 0.13° Inc, 100.00ft MD, 100.00ft TVD, 0.05ft VS
- Gyrodatta MS Gyro <12-1/4">(300)(427-663') : 0.60° Inc, 427.00ft MD, 427.00ft TVD, 1.32ft VS
- APS EM <12-1/4">(663)(793-2532') : 5.61° Inc, 793.00ft MD, 792.37ft TVD, 10.74ft VS

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #04	Callahan Unit 1H	Callahan Unit 1H AWB	Callahan Unit 1H AWP Proj. 17113
Slot #04	Callahan Unit 1H	Callahan Unit 1H PWB	Callahan Unit 1H PWB Rev:8.0

Well Profile Data						
Design Comment	MD (ft)	Az (°)	Inc (")	Local N (ft)	Local E (ft)	DLS (°/100ft)
True On	2532.00	4.160	91.960	2522.91	60.77	2.13
Proj. To Bottom	2600.00	4.160	91.960	2590.73	65.70	0.00
Drill Out Csg	2750.00	4.160	91.960	2740.33	76.57	0.00
End of 3D Arc	3681.08	22.065	60.858	3644.06	148.17	2.00
Curve KOP	6698.62	22.065	60.858	6440.58	700.20	1254.83
POE	7622.30	71.130	154.458	7114.00	338.85	1651.34
Landing Pt	7891.93	90.000	154.458	7156.00	99.95	1765.50
On Azimuth	8119.31	90.000	161.290	7158.00	-110.57	1851.09
BHL	17059.33	90.000	161.290	7158.00	-8578.15	4718.86
						0.00
						9638.53

API: 47-017-06873-0000
 BHI Job #: 109886808B
 Rig: H&P 317
 Duration: 06/29/2019-09/04/2019



Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	11/10/2019
Job End Date:	11/30/2019
State:	West Virginia
County:	Doddridge
API Number:	47-017-06873-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Callahan 1H
Latitude:	39.31452200
Longitude:	-80.72541400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,156
Total Base Water Volume (gal):	13,989,710
Total Base Non Water Volume:	0

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Fresh Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	55.57874	Density = 8.34
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	30.50115	Density = 8.50

Ingredients	Listed Above	Listed Above	Listed Above						
				Water		7732-18-5	100.00000	0.17639	
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker				Listed Below			
LD-2950	MultiChem	Friction Reducer				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant				Listed Below			
HYDROCHLORI C ACID, 22 BAUME	Halliburton	Solvent				Listed Below			
FORSA SCW4037W SCALE INHIBITOR	Baker Hughes	Scale Inhibitor				Listed Below			
Legend LD-2555	MultiChem	Additive				Listed Below			
Legend LD-2990	MultiChem	Friction Reducer				Listed Below			
						Listed Below			

FDP-S1296-17	Halliburton	Acid Corrosion Inhibitor												
					Listed Below									
WG-36 GELLING AGENT	Halliburton	Gelling Agent												
					Listed Below									
MC B-8614	Halliburton	Biocide												
					Listed Below									
CalFrac CalBreak 5501	Calfrac Well Services Corp.	Oxidizer												
					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					13.70630			
			Hydrochloric acid	7647-01-0		30.00000					0.04238			
			Complex Amine Compound	Proprietary		60.00000					0.02319			
			Hydrotreated light petroleum distillate	64742-47-8		30.00000					0.01334			
			Alkanolamine phosphate	Trade Secret		30.00000					0.00442			
			Complex Amine Compound	Proprietary		60.00000					0.00350			
			Methanol	67-56-1		100.00000					0.00328			
			Guar gum	9000-30-0		100.00000					0.00320			
			Glutaraldehyde	111-30-8		30.00000					0.00253			
			Ethylene glycol	107-21-1		5.00000					0.00074			
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1		5.00000					0.00042			
			Polyethoxylated fatty amine salt	61791-26-2		30.00000					0.00040			

	Ethoxylated alcohols	Proprietary	1.00000	0.00039
	Adipic acid	124-04-9	1.00000	0.00039
	Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega- hydroxy-, branched	69011-36-5	1.00000	0.00039
	Sorbitan, mono-9- octadecenoate, (Z)	1338-43-8	5.00000	0.00029
	Surfactant	Proprietary	5.00000	0.00029
	Ethanol	64-17-5	1.00000	0.00008
	Modified thiourea polymer	Proprietary	30.00000	0.00008
	Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00008
	Ethoxylated alcohols	Proprietary	1.00000	0.00006
	Organic chloridie compound	Proprietary	1.00000	0.00006
	Alkoxyated polyhydric alcohol	Proprietary	1.00000	0.00006
	Peroxydisulfuric acid ((HO)S(O)2]2O2), ammonium salt (1:2)	7727-54-0	100.00000	0.00006
	Ammonium persulfate	7727-54-0	100.00000	0.00005
	Oxylated phenolic resin	Proprietary	30.00000	0.00001
	Hexadecene	629-73-2	5.00000	0.00001
	Propargyl alcohol	107-19-7	5.00000	0.00001
	Ethoxylated alcohols	Proprietary	5.00000	0.00001
	2-Propenoic acid, methyl ester, polymer with 1,1- dichloroethene	25038-72-6	20.00000	0.00001
	Phosphoric acid	7664-38-2	0.10000	0.00001
	Acrylamide	79-06-1	0.10000	0.00001
	Organic salt #1	Proprietary	0.10000	0.00001
	Nitrated acetate salt	Proprietary	0.01000	0.00000
	Formaldehyde	50-00-0	0.01000	0.00000
	Organic salt #2	Proprietary	0.01000	0.00000

			Organic salt #3	Proprietary	0.01000	0.00000
			Sodium glycollate	2836-32-0	0.01000	0.00000
			Sodium hydroxide	1310-73-2	0.01000	0.00000
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
 ** information is based on the maximum potential for concentration and thus the total may be over 100%
 *** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
 Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°20'00"

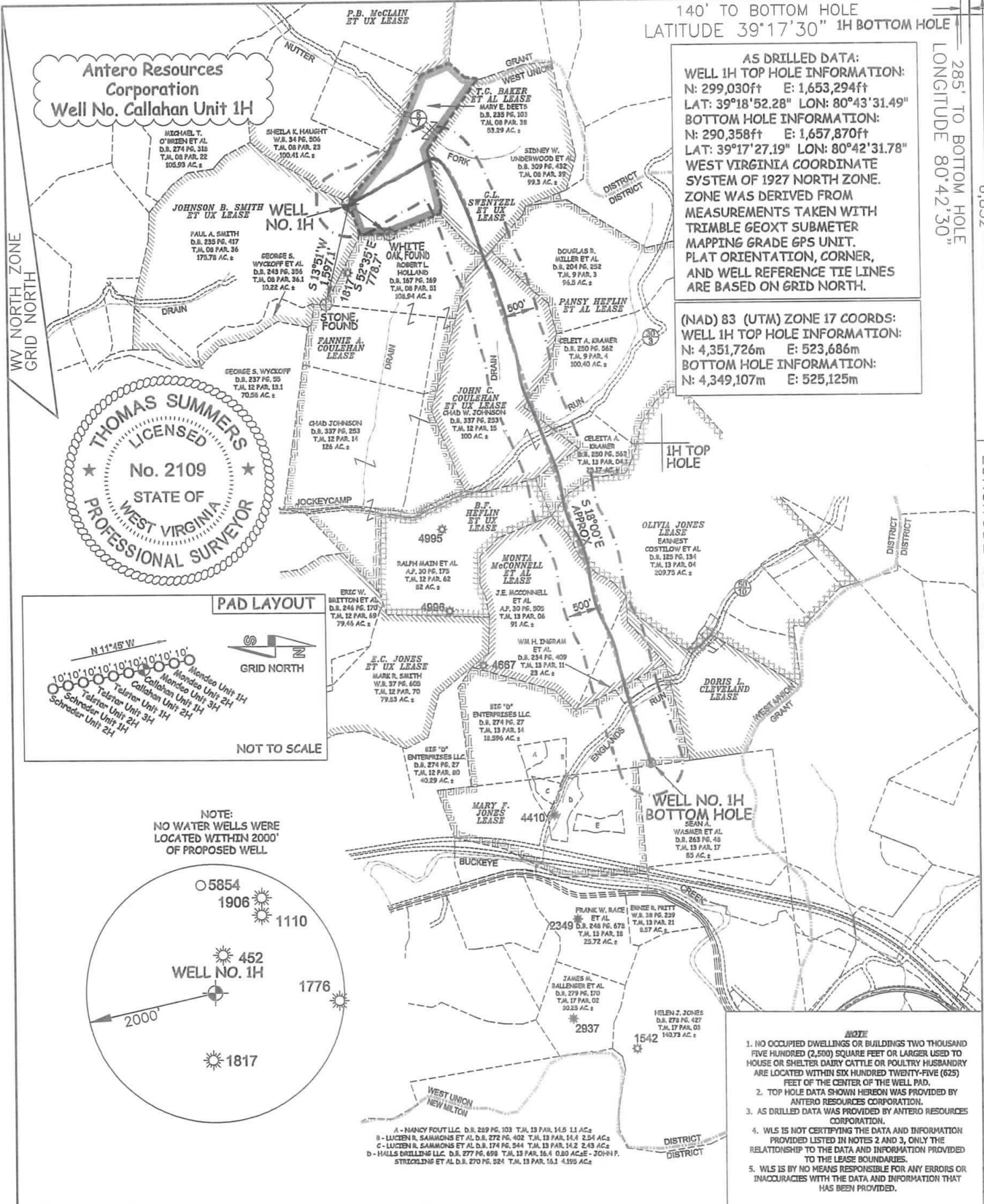
4,833'

140' TO BOTTOM HOLE
LATITUDE 39°17'30" 1H BOTTOM HOLE

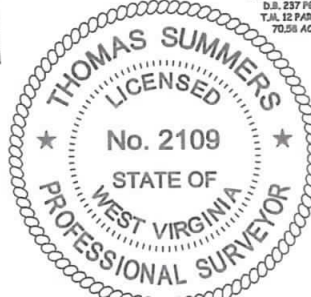
285' TO BOTTOM HOLE
LONGITUDE 80°42'30"

6,852'

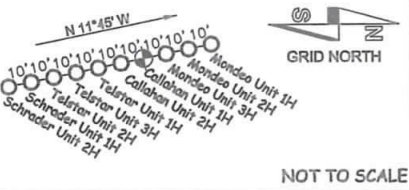
LONGITUDE 80°42'30"



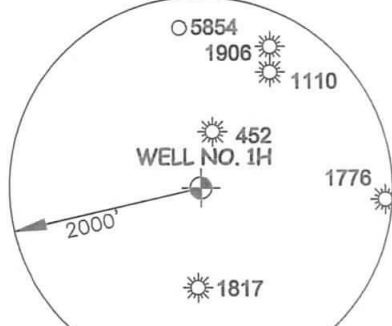
Antero Resources Corporation
Well No. Callahan Unit 1H



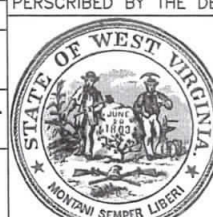
PAD LAYOUT



NOTE:
NO WATER WELLS WERE
LOCATED WITHIN 2000'
OF PROPOSED WELL



- NOTE**
- 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.
 - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 - 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.
 - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

JOB # <u>13-028WA</u>	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.	 <p>STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS</p> <p>WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415</p>	LEGEND
DRAWING # <u>CALLAHAN1HAD</u>			<p>----- Surface Owner Boundary Lines +/-</p> <p>----- Interior Surface Tracts +/-</p> <p>○ Proposed Well Path</p> <p>⊗ As Drilled Well Path</p>
SCALE <u>1" = 2000'</u>			<p>THOMAS SUMMERS P.S. 2109</p> <p>DATE <u>04/16/20</u></p> <p>OPERATOR'S WELL# <u>CALLAHAN UNIT #1H</u></p> <p>API WELL # <u>47 - 017 - 06873</u></p> <p>STATE COUNTY PERMIT</p>
MINIMUM DEGREE OF ACCURACY <u>SUBMETER</u>			COUNTY NAME <u>WEST UNION</u>
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS			COUNTY NAME <u>DODDRIDGE</u>
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS			PERMIT
WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/>			
(IF "GAS") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>			
LOCATION: ELEVATION <u>1,376' - AS BUILT</u> WATERSHED <u>HEADWATERS MIDDLE ISLAND CREEK</u>			
QUADRANGLE <u>SMITHBURG 7.5'</u> DISTRICT <u>WEST UNION</u> COUNTY <u>DODDRIDGE</u>			
SURFACE OWNER <u>MARY E. DEETS AND/OR PAUL A. SMITH</u> ACREAGE <u>53.29 ACRES +/- AND/OR 175.78 ACRES±</u>			
OIL & GAS ROYALTY OWNER <u>JOHNSON B. SMITH ET UX; T.G. BAKER ET AL; G.L. SWENTZEL ET UX; FANNIE A. COULEHAN; JOHN C. COULEHAN ET UX; PANSY HEFLIN ET AL; OLIVIA JONES; MONTA McCONNELL ET AL; MARY F. JONES</u> LEASE ACREAGE <u>180 ACRES±; 53.46 ACRES±; 103 ACRES±; 250 ACRES±; 118 ACRES±; 222.5 ACRES±; 260 ACRES±; 114 ACRES±; 194 ACRES±</u>			
PROPOSED WORK: DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/>			
PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) <u>AS DRILLED</u> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/>			
TARGET FORMATION <u>MARCELLUS</u> ESTIMATED DEPTH <u>7,099' TVD 17,113' MD</u>			
WELL OPERATOR <u>ANTERO RESOURCES CORP.</u> DESIGNATED AGENT <u>DIANNA STAMPLER - CT CORPORATION SYSTEM</u>			
ADDRESS <u>1615 WYNKOOP STREET</u> ADDRESS <u>5400 D BIG TYLER ROAD</u>			
FORM WW-6 DENVER, CO 80202			CHARLESTON, WV 25313