

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

API 47 - 095 - 02518 County Tyler District Centerville
Quad West Union 7.5' Pad Name Meredith Pad Field/Pool Name -----
Farm name Roy A. Meredith Well Number Sarahlene 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 4355478m Easting 511223m
Landing Point of Curve Northing 4355265.37m Easting 511062.92m
Bottom Hole Northing 4352478m Easting 511902m

Elevation (ft) 1111' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 9/21/2018 Date drilling commenced 10/7/2018 Date drilling ceased 2/17/2019
Date completion activities began 9/4/2019 Date completion activities ceased 10/11/2019
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 463', 683' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1521', 2109' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 63', 1239' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

API 47- 095 - 02518 Farm name Roy A. Meredith Well number Sarahlene 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"	97'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	821'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2602'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16166'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6996'		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	670 sx	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	915 sx	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	735 sx (Lead) 1385 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.40 (Lead), 1.26 (Tail)		-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16340' MD, 6546' TVD (BHL), 6558' (Deepest Point Drilled) Loggers TD (ft) 16340' MD

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

Plug back procedure N/A

Kick off depth (ft) 6050'

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- 095 - 02518 Farm name Roy A. Meredith Well number Sarahlene Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6487' (TOP)</u>	<u>TVD</u>	<u>7073' (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 11432 mcfpd Oil 114 bpd NGL --- bpd Water 241 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 3.27.20

API 47-095-02518 Farm Name Roy A. Meredith Well Number Sarahlene Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/20/2019	15435	15489.9	60	Marcellus
2	9/20/2019	15235.4186	15403.7364	60	Marcellus
3	9/20/2019	15035.83721	15204.155	60	Marcellus
4	9/21/2019	14836.25581	15004.5736	60	Marcellus
5	9/21/2019	14636.67442	14804.9922	60	Marcellus
6	9/21/2019	14437.09302	14605.4109	60	Marcellus
7	9/21/2019	14237.51163	14405.8295	60	Marcellus
8	9/22/2019	14037.93023	14206.2481	60	Marcellus
9	9/22/2019	13838.34884	14006.6667	60	Marcellus
10	9/22/2019	13638.76744	13807.0853	60	Marcellus
11	9/22/2019	13439.18605	13607.5039	60	Marcellus
12	9/23/2019	13239.60465	13407.9225	60	Marcellus
13	9/23/2019	13040.02326	13208.3411	60	Marcellus
14	9/23/2019	12840.44186	13008.7597	60	Marcellus
15	9/23/2019	12640.86047	12809.1783	60	Marcellus
16	9/24/2019	12441.27907	12609.5969	60	Marcellus
17	9/24/2019	12241.69767	12410.0155	60	Marcellus
18	9/24/2019	12042.11628	12210.4341	60	Marcellus
19	9/24/2019	11842.53488	12010.8527	60	Marcellus
20	9/25/2019	11642.95349	11811.2713	60	Marcellus
21	9/25/2019	11443.37209	11611.6899	60	Marcellus
22	9/25/2019	11243.7907	11412.1085	60	Marcellus
23	9/26/2019	11044.2093	11212.5271	60	Marcellus
24	9/26/2019	10844.62791	11012.9457	60	Marcellus
25	9/26/2019	10645.04651	10813.3643	60	Marcellus
26	9/26/2019	10445.46512	10613.7829	60	Marcellus
27	9/27/2019	10245.88372	10414.2016	60	Marcellus
28	9/27/2019	10046.30233	10214.6202	60	Marcellus
29	9/27/2019	9846.72093	10015.0388	60	Marcellus
30	9/27/2019	9647.139535	9815.45736	60	Marcellus
31	9/28/2019	9447.55814	9615.87597	60	Marcellus
32	9/28/2019	9247.976744	9416.29457	60	Marcellus
33	9/28/2019	9048.395349	9216.71318	60	Marcellus
34	9/29/2019	8848.813953	9017.13178	60	Marcellus
35	9/29/2019	8649.232558	8817.55039	60	Marcellus
36	9/29/2019	8449.651163	8617.96899	60	Marcellus
37	9/30/2019	8250.069767	8418.3876	60	Marcellus
38	9/30/2019	8050.488372	8218.8062	60	Marcellus
39	9/30/2019	7850.906977	8019.22481	60	Marcellus
40	10/1/2019	7651.325581	7819.64341	60	Marcellus
41	10/1/2019	7451.744186	7620.06202	60	Marcellus
42	10/1/2019	7252.162791	7420.48062	60	Marcellus
43	10/1/2019	7052.581395	7220.89922	60	Marcellus
44	10/2/2019	6853	7021.31783	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	9/20/2019	77.39727	8087.976	6563	4067	174650	5238.8	N/A
2	9/20/2019	75.52996	8113.353	6828	3758	403550	8904.1	N/A
3	9/20/2019	83.0042	8465.137	6894	4446	404050	8873.4	N/A
4	9/21/2019	86.45206	8393.027	5942	4333	403300	8628.5	N/A
5	9/21/2019	75.91273	7543.565	6134	4175	402950	8797.9	N/A
6	9/21/2019	76.48332	7531.738	6175	4134	402850	8736.8	N/A
7	9/21/2019	84.8823	8578.197	6924	4259	403200	8833.4	N/A
8	9/22/2019	87.95125	8458.227	6311	3952	402450	8669.1	N/A
9	9/22/2019	81.62681	7864.3	5251	4201	403750	8837	N/A
10	9/22/2019	81.45649	7998.126	6755	4098	403000	8591.5	N/A
11	9/22/2019	83.5966	8261.918	6608	4287	403100	8632.4	N/A
12	9/23/2019	83.66053	8212.586	6653	3921	403400	8458.8	N/A
13	9/23/2019	84.44329	7893.802	5084	4135	402800	8546.2	N/A
14	9/23/2019	82.43415	8033.008	6403	4080	402750	8701.8	N/A
15	9/23/2019	84.49458	8383.914	6542	4068	402950	8657.4	N/A
16	9/24/2019	84.62676	8303.046	6399	4023	403100	8603.6	N/A
17	9/24/2019	84.81728	8097.29	6188	4048	402800	8580.4	N/A
18	9/24/2019	86.40135	8003.215	6354	4011	402850	8727.2	N/A
19	9/24/2019	86.47281	8050.99	6408	4099	402750	8606	N/A
20	9/25/2019	86.69987	8044.101	6769	4013	403100	8537	N/A
21	9/25/2019	84.79271	7967.202	6723	3871	403450	8651.3	N/A
22	9/25/2019	85.21508	7849.895	6550	3619	402700	8629.6	N/A
23	9/26/2019	87.06094	7983.248	6598	3745	402900	8576.8	N/A
24	9/26/2019	87.20699	7948.83	7035	4105	403850	8490.7	N/A
25	9/26/2019	84.90555	7658.346	6879	4006	403000	8503.9	N/A
26	9/26/2019	84.84732	7763.209	6945	3795	403300	8486	N/A
27	9/27/2019	86.86374	7672.76	5127	4080	402850	8566.3	N/A
28	9/27/2019	84.94983	7476.8	6762	4027	403150	8554.5	N/A
29	9/27/2019	84.664	7469.474	6930	3910	403200	8523.7	N/A
30	9/27/2019	86.78384	7407.551	5977	3834	403450	8546.2	N/A
31	9/28/2019	87.15713	7323.011	6256	3910	403100	8483.7	N/A
32	9/28/2019	85.75982	7439.948	6420	3820	402700	8409.9	N/A
33	9/28/2019	87.15353	7735.083	6229	4026	403320	8927.1	N/A
34	9/29/2019	89.73161	7566.806	6632	3840	402600	8602.6	N/A
35	9/29/2019	85.2429	7049.238	6002	4201	403000	8588.5	N/A
36	9/29/2019	88.89625	7367.025	6798	3830	403500	8447.4	N/A
37	9/30/2019	89.41819	7455.007	6815	4146	403600	8436.4	N/A
38	9/30/2019	86.53188	6964.966	6219	3994	402600	8482.4	N/A
39	9/30/2019	87.16489	7021.895	6053	3867	403000	8869.7	N/A
40	10/1/2019	89.78227	7186.072	6737	3831	403200	8383.9	N/A
41	10/1/2019	88.86092	7258.617	6241	3935	403050	8439.3	N/A
42	10/1/2019	85.5389	6969.248	6677	3915	403620	8454.7	N/A
43	10/1/2019	88.09997	7092.366	6398	3897	402850	8505.4	N/A
44	10/2/2019	88.81064	7185.736	6840	3884	404330	8623.9	N/A
	AVG	85.1	7,753	6,432	4,004	17,509,670	375,345	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
Silty Sandstone	85	145	85	145
Sandstone	145	185	145	185
Silty sandstone tr coal	185	540	185	540
Shaly siltstone tr coal	540	655	540	655
Shaly siltstone	655	705	655	705
Silty Sandstone	705	985	705	985
Silty sandstone	985	1,035	985	1,035
Silty Sandstone	1,035	1,105	1,035	1,105
Siltstone	1,105	1,285	1,105	1,285
Siltstone tr coal	1,285	1,405	1,285	1,405
Sandstone tr coal	1,405	1,635	1,405	1,635
Shaly siltstone tr coal	1,635	1,725	1,635	1,725
Silty sandstone tr coal	1,725	1,974	1,725	1,991
Big Lime	1,989	2,872	1,966	2,874
Fifty Foot Sandstone	2,872	2,957	2,849	2,960
Gordon	2,957	3,099	2,935	3,103
Fifth Sandstone	3,099	3,302	3,078	3,308
Bayard	3,302	3,800	3,283	3,812
Speechley	3,800	4,085	3,787	4,101
Balitown	4,085	4,445	4,076	4,466
Bradford	4,445	4,956	4,441	4,986
Benson	4,956	5,267	4,961	5,301
Alexander	5,267	6,341	5,276	6,449
Sycamore	6,191	6,316	6,263	6,424
Middlesex	6,316	6,426	6,424	6,618
Burkett	6,426	6,460	6,618	6,703
Tully	6,460	6,492	6,703	6,808
Marcellus	6,492	NA	6,808	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:	9/20/2019
Job End Date:	10/2/2019
State:	West Virginia
County:	Tyler
API Number:	47-095-02518-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Sarahlene Unit 1H
Latitude:	39.34858900
Longitude:	-80.86991900
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,565
Total Base Water Volume (gal):	16,263,467
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	88.33416	
Hydrochloric Acid	CWS	Clean Perforations					
				Listed Below			

				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	11.39646
				Illite	12173-60-3	1.00000	0.11396
				Hydrochloric acid	7647-01-0	37.00000	0.05507
				Polymer	26100-47-0	45.00000	0.01929
				Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.01286
				Biotite	1302-27-8	0.10000	0.01140
				Apatite	64476-38-6	0.10000	0.01140
				Ilmenite	98072-94-7	0.10000	0.01140
				Goethite	1310-14-1	0.10000	0.01140
				Polyethylene glycol mixture	25322-68-3	54.50000	0.00734
				Ammonium chloride	12125-02-9	11.00000	0.00472
				2,2-Dibromo-3-Nitripropionamide	10222-01-2	20.00000	0.00269
				Sorbitan monooleate	1338-43-8	4.00000	0.00171
				Polyethylene glycol monooleate	9004-96-0	3.00000	0.00129
				Sorbitol tetraoleate	61723-83-9	2.00000	0.00086
				Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.00083
				Guar gum	9000-30-0	60.00000	0.00083
				Sodium bromide	7647-15-6	4.00000	0.00054
				Citric acid	77-92-9	60.00000	0.00050
				Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00043
				Dibromoacetonitrile	3252-43-5	3.00000	0.00040
				Alkylxypolyethyleneoxy ethanol	84133-50-6	0.50000	0.00021

				68953-58-2	5.00000	0.00007	
		Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite					
		Acrylamide		79-06-1	0.10000	0.00004	
		Ammonium Persulfate		7727-54-0	100.00000	0.00003	
		Ethylene Glycol		107-21-1	40.00000	0.00003	
		Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether		37251-67-5	1.50000	0.00002	
		Diethylene glycol, monomethyl ether		34590-94-8	20.00000	0.00002	
		Vinylidene chloride-methyl acrylate copolymer		25038-72-6	20.00000	0.00001	
		Cinnamaldehyde		104-55-2	10.00000	0.00001	
		Ethoxylated Alcohols		68131-39-5	10.00000	0.00001	
		Formic acid		64-18-6	10.00000	0.00001	
		Tar bases, quinolone derivs, benzyl chloride- quaternized		72480-70-7	10.00000	0.00001	
		Isopropyl alcohol		67-63-0	5.00000	0.00001	
		Organic Acid Salts		9003-04-7			Proprietary Additive Concentration
		Glycol		57-55-6			Proprietary Additive Concentration

* 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)

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Antero Resources Corporation
API No: 47-095-02518 County: Tyler
District: Centerville Well No: Sarahlene Unit 1H
Farm Name: Roy A. Meredith et al
Discharge Date/s From:(MMDDYY) 10/21/19 To: (MMDDYY) 11/20/19
Discharge Times. From: 0:00 To: 24:00
Total Volume to be Disposed from this facility (gallons): 719,859
Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: _____ (Include a topographical map of the Area.)
(2) UIC: 1,522 Permit No. 3416729731
(3) Offsite Disposal: _____ Site Location: _____
(4) Reuse: 718,337 Alternate Permit Number: _____
(5) Centralized Facility: _____ Permit No. _____
(6) Other method: _____ (Include an explanation)

Follow Instructions below to determine your treatment category:

Optional Pretreatment test: n/a Cl- mg/l n/a DO mg/l

1. Do you have permission to use expedited treatment from the Director or his representative?
(Y/N) n/a If yes, who? _____ and place a four (4) on line 7.
If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) n/a If yes, go to line 5. If not, go to line 3.
3. Do you have a chloride value pretreatment (see above)? (Y/N) n/a If yes, go to line 4
If not, go to line 5.
4. Is the Chloride level less than 5000 mg/l? (Y/N) n/a If yes, then enter a one (1) on line 7.
5. Do you have a pretreatment value for DO? (See above) (Y/N) n/a If yes, go to line 6
If not, enter a three (3) in line 7.
6. Is the DO level greater than 2.5 mg/l?(Y/N) n/a If yes, enter a two (2) on line 7. If not, enter a three (3) on line 7.
7. n/a is the category of your pit. Use the Appropriate section.
8. Comments on Pit condition: n/a No Pit on Site

Name of Principal Exec. Officer: Gretchen Kohler

Title of Officer: Senior Environmental and Regulatory Manager

Date Completed: 3/16/20

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.


Signature of a Principal Exec. Officer or Authorized agent.

Category 1
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	5	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl	5,000	_____	5,000	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

*** Al is only reported if the pH is above 9.0

Category 2
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	10	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0

Category 3
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	20	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____ Date: _____

** Include a description of your aeration technique. Aeration Code: _____

*** Al is only reported if the pH is above 9.0.

Category 4
Sampling Results
API No: _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	1	_____	N/A	N/A	Days
Fe	Monitor	_____	Monitor	_____	mg/l
D.O.	Monitor	_____	Monitor	_____	mg/l
Settleable Sol.	Monitor	_____	Monitor	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Activated Carbon (0.175)		_____	N/A	N/A	lb/B1
Date Site Reclaimed	N/A	N/A			10 days from dis.
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____ Date: _____

LATITUDE 39°22'30"

LATITUDE 39°20'00"

10,347'

8,135' TO BOTTOM HOLE

3,213' TO BOTTOM HOLE
LONGITUDE 80°50'00"

9,620'

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Sarahlene Unit 1H

AS DRILLED DATA:

WELL 1H TOP HOLE INFORMATION:
N: 312,027ft E: 1,612,601ft
LAT: 39°20'54.92" LON: 80°52'11.71"

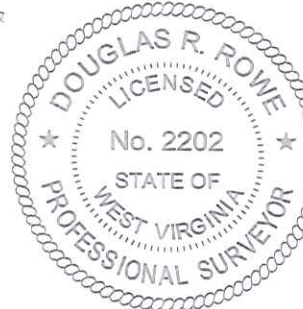
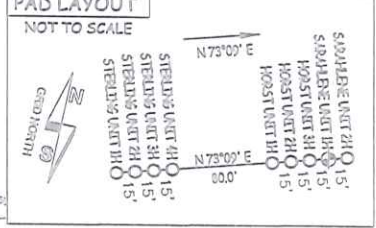
BOTTOM HOLE INFORMATION:
N: 303,226ft E: 1,614,682ft
LAT: 39°19'28.25" LON: 80°51'43.52"

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: 4,355,478m E: 511,223m

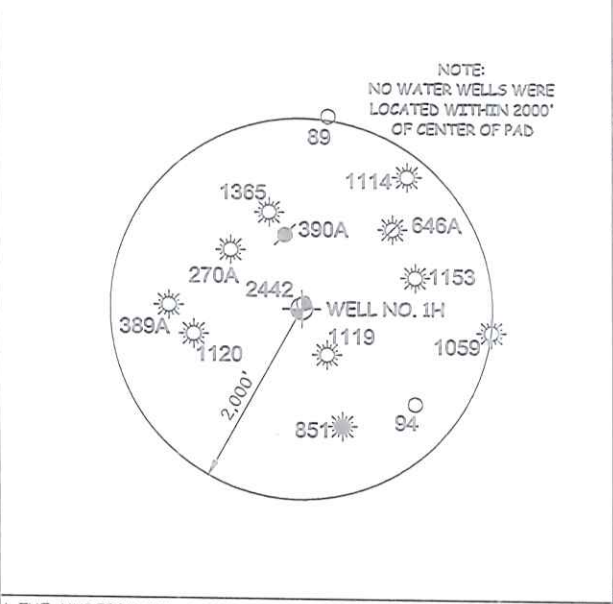
BOTTOM HOLE INFORMATION:
N: 4,352,807m E: 511,902m



JOB # 17-012WA
DRAWING # SARAHLENE1HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

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

DOUGLAS R. ROWE P.S. 2202
DATE 02/18/20



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

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 RESIDUALS 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
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

(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1111'-AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK STATE COUNTY PERMIT

QUADRANGLE WEST UNION 7.5' DISTRICT CENTERVILLE COUNTY TYLER

SURFACE OWNER ROY A. MEREDITH ACREAGE 59.39 ACRES +/-

OIL & GAS ROYALTY OWNER ROY A. MEREDITH ET UX; COLLEEN GRIFFIN ASH; O.W. GRIFFIN ET UX; LEASE ACREAGE 80 AC±; 44.187 AC±; 222 AC±;

N. M. WELCH HEIRS; CAMMIE GATRELL ET AL; NATHAN CAIN ET AL; EUGENE R. WALTON ET AL 95 AC±; 139.75 AC±; 278 AC±; 137 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 6,565' TVD 15,614' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM

ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

FORM WW-6 DENVER, CO 80202

