



Antero Resources  
1615 Wynkoop Street  
Denver, CO 80202  
Office 303.357.7310  
Fax 303.357.7315

April 30, 2020

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304

To Whom It May Concern:

Please find enclosed the Well Operator's Report of Well Work, Form WR-35 (including As-Drilled Survey Plat, Directional Survey and FracFocus report), Discharge Monitoring Report Form WR-34 and corresponding logs for the following wells off of the **Oxford 97 Pad**:

- Oxford 97 AHS
- Oxford 97 BHS
- Oxford 97 CHS
- Oxford 97 DHS
- Oxford 97 EHS
- Oxford 97 FHS
- Oxford 97 GHS
- Oxford 97 HHS

If you have any questions, please feel free to contact me at (303)-357-7223.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Griffith", with a long horizontal flourish extending to the right.

Megan Griffith  
Permitting Agent  
Antero Resources Corporation

Enclosures

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

API 47-017-06482 County Doddridge District West Union  
Quad Oxford 7.5' Pad Name Oxford 97 Pad Field/Pool Name -----  
Farm name Haessly Land & Timber LLC Well Number Oxford 97 AHS  
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 4342664m Easting 516941m  
Landing Point of Curve Northing 4342478.09m Easting 516412.57m  
Bottom Hole Northing 4344790m Easting 515328m

Elevation (ft) 1333' 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 3/15/2019 Date drilling commenced 3/26/2019 Date drilling ceased 6/10/2019  
Date completion activities began 10/5/2019 Date completion activities ceased 11/19/2019  
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 108', 505' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1378', 1544' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

Reviewed by:

\_\_\_\_\_

API 47-017 - 06482 Farm name Haessly Land & Timber LLC Well number Oxford 97 AHS

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"	58'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	904'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3000'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16725'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7542'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	214 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	631 sx	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	890 sx	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	675sx (Lead) 2448sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.40 (Lead), 1.26 (Tail)		~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16447' MD, 6867' TVD (BHL), 6877' (Deepest Point Drilled) Loggers TD (ft) 16447' MD

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

Plug back procedure N/A

Kick off depth (ft) 6000'

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 - 06482 Farm name Haessly Land & Timber LLC Well number Oxford 97 AHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6792' (TOP)</u>	<u>TVD</u>	<u>7611' (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 4319 mcfpd Oil 63 bpd NGL --- bpd Water 2 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 <sub>2</sub> 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 4.30.20

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/11/2019	16588	16421.89	60	Marcellus
2	10/11/2019	16388.668	16222.558	60	Marcellus
3	10/12/2019	16189.336	16023.226	60	Marcellus
4	10/12/2019	15990.004	15823.894	60	Marcellus
5	10/12/2019	15790.672	15624.562	60	Marcellus
6	10/13/2019	15591.34	15425.23	60	Marcellus
7	10/13/2019	15392.008	15225.898	60	Marcellus
8	10/13/2019	15192.676	15026.566	60	Marcellus
9	10/13/2019	14993.344	14827.234	60	Marcellus
10	10/14/2019	14794.012	14627.902	60	Marcellus
11	10/14/2019	14594.68	14428.57	60	Marcellus
12	10/14/2019	14395.348	14229.238	60	Marcellus
13	10/14/2019	14196.016	14029.906	60	Marcellus
14	10/15/2019	13996.684	13830.574	60	Marcellus
15	10/15/2019	13797.352	13631.242	60	Marcellus
16	10/15/2019	13598.02	13431.91	60	Marcellus
17	10/16/2019	13398.688	13232.578	60	Marcellus
18	10/16/2019	13199.356	13033.246	60	Marcellus
19	10/16/2019	13000.024	12833.914	60	Marcellus
20	10/16/2019	12800.692	12634.582	60	Marcellus
21	10/17/2019	12601.36	12435.25	60	Marcellus
22	10/17/2019	12402.028	12235.918	60	Marcellus
23	10/17/2019	12202.696	12036.586	60	Marcellus
24	10/18/2019	12003.364	11837.254	60	Marcellus
25	10/18/2019	11804.032	11637.922	60	Marcellus
26	10/18/2019	11604.7	11438.59	60	Marcellus
27	10/19/2019	11405.368	11239.258	60	Marcellus
28	10/19/2019	11206.036	11039.926	60	Marcellus
29	10/19/2019	11006.704	10840.594	60	Marcellus
30	10/20/2019	10807.372	10641.262	60	Marcellus
31	10/20/2019	10608.04	10441.93	60	Marcellus
32	10/20/2019	10408.708	10242.598	60	Marcellus
33	10/20/2019	10209.376	10043.266	60	Marcellus
34	10/21/2019	10010.044	9843.934	60	Marcellus
35	10/21/2019	9810.712	9644.602	60	Marcellus
36	10/21/2019	9611.38	9445.27	60	Marcellus
37	10/21/2019	9412.048	9245.938	60	Marcellus
38	10/22/2019	9212.716	9046.606	60	Marcellus
39	10/22/2019	9013.384	8847.274	60	Marcellus
40	10/22/2019	8814.052	8647.942	60	Marcellus
41	10/23/2019	8614.72	8448.61	60	Marcellus
42	10/23/2019	8415.388	8249.278	60	Marcellus
43	10/23/2019	8216.056	8049.946	60	Marcellus
44	10/23/2019	8016.724	7850.614	60	Marcellus
45	10/24/2019	7817.392	7651.282	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	10/11/2019	77.36469	8143.521	6236	4419	399960	7433.38	N/A
2	10/11/2019	85.85767	8325.794	5756	4400	400350	7281.59	N/A
3	10/12/2019	83.08315	8222.197	5850	4140	400500	7175.92	N/A
4	10/12/2019	78.35364	7739.713	5709	3745	400200	7181.2	N/A
5	10/12/2019	81.80403	8484.043	6137	3442	399800	7135.97	N/A
6	10/13/2019	79.61448	8590.783	6274	3488	399600	7128.33	N/A
7	10/13/2019	80.85225	8201.561	5854	3432	400350	7128.995	N/A
8	10/13/2019	80.38429	8223.816	5557	3664	400500	7133.57	N/A
9	10/13/2019	82.86406	8498.714	5269	3819	399600	6918.65	N/A
10	10/14/2019	82.97013	8395.966	5908	3369	400400	7004.29	N/A
11	10/14/2019	77.29619	7941.051	5643	3476	400250	7006.23	N/A
12	10/14/2019	80.3848	8024.832	5580	3374	400250	9192.1	N/A
13	10/14/2019	82.21984	8116.954	6105	3266	399850	6955.11	N/A
14	10/15/2019	84.32665	8179.474	5882	3580	399950	6999.34	N/A
15	10/15/2019	80.82541	8093.305	5751	3683	400450	7017.14	N/A
16	10/15/2019	63.55956	8197.39	5696	4221	400400	9077.655	N/A
17	10/16/2019	77.41165	8219.683	5770	3597	400250	6921.44	N/A
18	10/16/2019	79.04224	8051.696	5837	3558	399850	6995.39	N/A
19	10/16/2019	80.51597	7957.83	5620	3571	400800	6976.78	N/A
20	10/16/2019	85.1996	8318.099	5540	3543	400200	6857.16	N/A
21	10/17/2019	82.56091	8411.53	5565	3605	400500	6895.95	N/A
22	10/17/2019	83.44555	8324.593	5748	3135	400150	6956.13	N/A
23	10/17/2019	81.56872	8417.48	5336	3291	399900	6892.29	N/A
24	10/18/2019	81.60189	8106.461	5774	3353	399500	6890.78	N/A
25	10/18/2019	79.42331	7503.041	5771	3573	403100	7014.66	N/A
26	10/18/2019	77.68131	7941.139	5843	5121	402500	8637.07	N/A
27	10/19/2019	80.36222	8644.248	5650	3864	402000	6906.26	N/A
28	10/19/2019	83.07548	7944.319	5572	3488	402800	6899.95	N/A
29	10/19/2019	75.97655	8191.002	4544	3775	402000	8832.88	N/A
30	10/20/2019	84.14061	7966.658	5734	3322	403150	6839.34	N/A
31	10/20/2019	79.45595	7355.234	6256	3392	402900	6873.12	N/A
32	10/20/2019	79.80643	7475.041	6504	3412	402950	6846.48	N/A
33	10/20/2019	84.81456	7926.956	5481	3577	403850	6841.51	N/A
34	10/21/2019	85.44564	7954.101	5502	3776	402700	6874.47	N/A
35	10/21/2019	82.73513	7851.598	5432	3371	403400	6780.87	N/A
36	10/21/2019	84.64439	7937.171	5716	3852	402600	6837.05	N/A
37	10/21/2019	87.03482	7743.696	5484	3252	403700	6796.26	N/A
38	10/22/2019	86.58251	7858.306	6169	4908	404600	6804.28	N/A
39	10/22/2019	79.35727	7379.919	5598	4297	403100	6752.78	N/A
40	10/22/2019	79.25476	7072.285	5707	4770	403200	6782.66	N/A
41	10/23/2019	78.00775	6987.295	5755	3488	402100	6807.41	N/A
42	10/23/2019	74.59834	7507.316	6304	3155	403100	8045.36	N/A
43	10/23/2019	81.89259	7160.243	5851	3126	403200	6758.62	N/A
44	10/23/2019	87.27411	7460.004	6218	3145	403850	6859.52	N/A
45	10/24/2019	83.35958	7594.083	6380	4607	403800	6747.76	N/A
	<b>AVG</b>	<b>81.1</b>	<b>7,970</b>	<b>5,775</b>	<b>3,699</b>	<b>18,068,160</b>	<b>321,694</b>	<b>TOTAL</b>

**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	60	160	60	160
Sandstone	160	270	160	270
Silty sandstone tr coal	270	320	270	320
Shaly siltstone tr coal	320	530	320	530
Shaly siltstone	530	640	530	640
Silty Sandstone	640	790	640	790
Silty sandstone	790	860	790	860
Silty Sandstone	860	1,070	860	1,070
Siltstone	1,070	1,260	1,070	1,260
Siltstone tr coal	1,260	1,425	1,260	1,425
Sandstone tr coal	1,425	1,750	1,425	1,750
Shaly siltstone tr coal	1,750	1,790	1,750	1,790
Silty sandstone tr coal	1,790	1,963	1,790	N/A
Big Lime	1,963	2,645	1,963	2,645
Fifty Foot Sandstone	2,645	2,723	2,645	2,723
Gordon	2,723	3,005	2,723	3,005
Fifth Sandstone	3,005	3,082	3,005	3,082
Bayard	3,082	3,837	3,082	3,868
Speechley	3,837	4,096	3,868	4,166
Balltown	4,096	4,581	4,166	4,727
Bradford	4,581	5,017	4,727	5,228
Benson	5,017	5,283	5,228	5,537
Alexander	5,283	6,612	5,537	7,145
Sycamore	6,396	6,594	6,860	7,127
Middlesex	6,594	6,724	7,145	7,396
Burkett	6,724	6,755	7,414	7,480
Tully	6,755	6,792	7,498	7,611
Marcellus	6,792	NA	7,611	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.



**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	60	160	60	160
Sandstone	160	270	160	270
Silty sandstone tr coal	270	320	270	320
Shaly siltstone tr coal	320	530	320	530
Shaly siltstone	530	640	530	640
Silty Sandstone	640	790	640	790
Silty sandstone	790	860	790	860
Silty Sandstone	860	1,070	860	1,070
Siltstone	1,070	1,260	1,070	1,260
Siltstone tr coal	1,260	1,425	1,260	1,425
Sandstone tr coal	1,425	1,750	1,425	1,750
Shaly siltstone tr coal	1,750	1,790	1,750	1,790
Silty sandstone tr coal	1,790	1,963	1,790	N/A
Big Lime	1,963	2,645	1,963	2,645
Fifty Foot Sandstone	2,645	2,723	2,645	2,723
Gordon	2,723	3,005	2,723	3,005
Fifth Sandstone	3,005	3,082	3,005	3,082
Bayard	3,082	3,837	3,082	3,868
Speechley	3,837	4,096	3,868	4,166
Balltown	4,096	4,581	4,166	4,727
Bradford	4,581	5,017	4,727	5,228
Benson	5,017	5,283	5,228	5,537
Alexander	5,283	6,612	5,537	7,145
Sycamore	6,396	6,594	6,860	7,127
Middlesex	6,594	6,724	7,145	7,396
Burkett	6,724	6,755	7,414	7,480
Tully	6,755	6,792	7,498	7,611
Marcellus	6,792	NA	7,611	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.

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: 47-017-06481 County: Doddridge  
District: West Union Well No: OXFD97 AHS  
Farm Name: Haessly Land & Timber, LLC  
Discharge Date/s From: (MMDDYY) 12/27/19 To: (MMDDYY) 01/26/20  
Discharge Times. From: 0:00 To: 24:00  
Total Volume to be Disposed from this facility (gallons): 1,304,420  
Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: \_\_\_\_\_ (Include a topographical map of the Area.)  
(2) UIC: 101,119 Permit No. 3400923821, 3400923823, 3400923824, 3416729731, 3410523652, 3410523619, 4708509721, 3416729543, 3416729464, 3416729445  
(3) Offsite Disposal: \_\_\_\_\_ Site Location: \_\_\_\_\_  
(4) Reuse: 1,203,301 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/BI
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°15'00" 8,738' TO BOTTOM HOLE

LATITUDE 39°17'30"

LONGITUDE 80°47'30"

6,182'

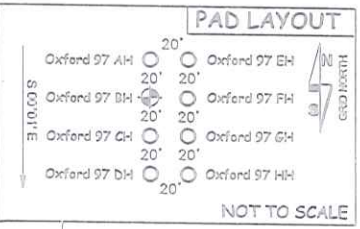
LONGITUDE 80°47'30"

14,370' TO BOTTOM HOLE

Antero Resources Corporation  
Well No. Oxford 97 AH

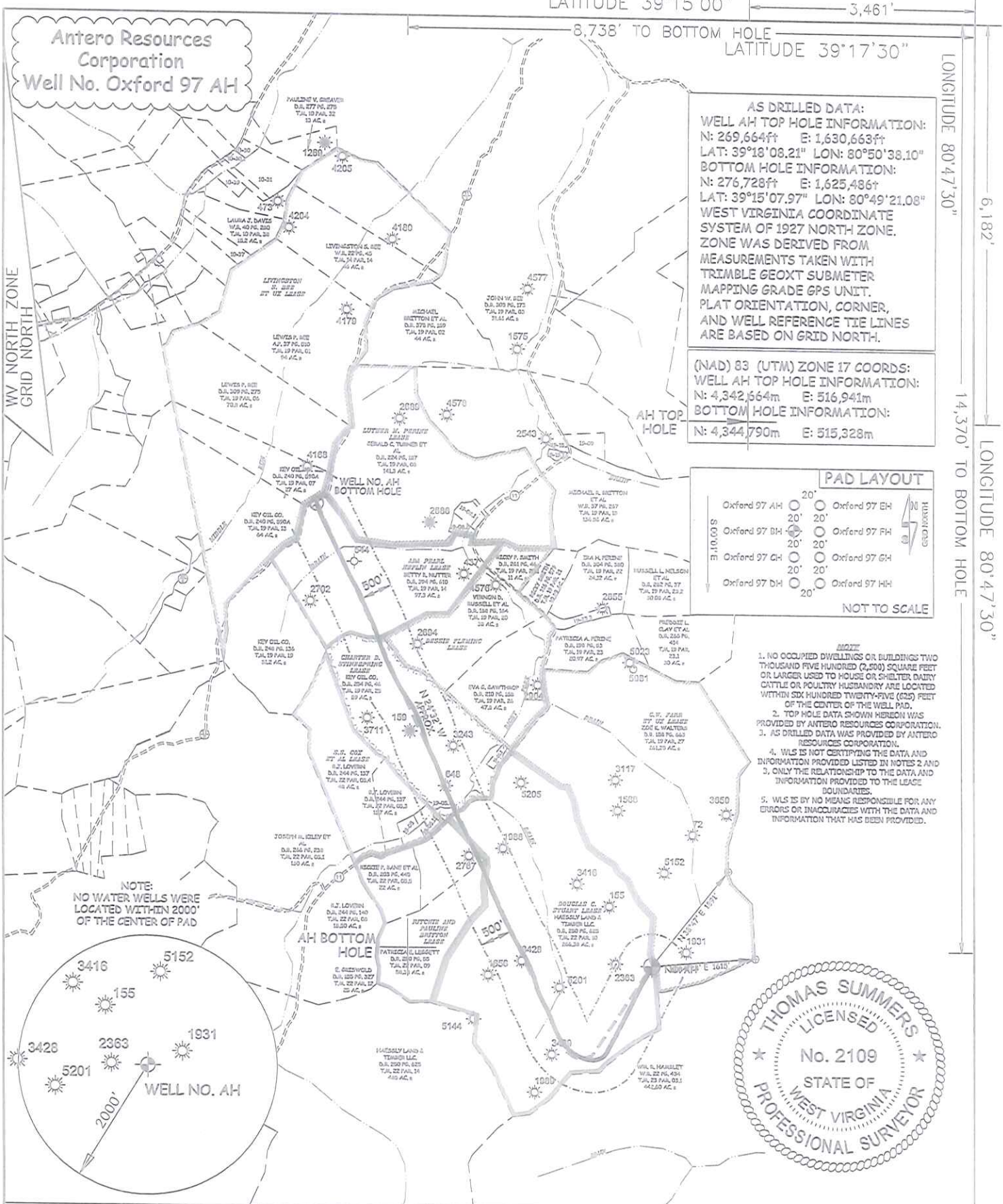
AS DRILLED DATA:  
WELL AH TOP HOLE INFORMATION:  
N: 269,664ft E: 1,630,663ft  
LAT: 39°18'08.21" LON: 80°50'38.10"  
BOTTOM HOLE INFORMATION:  
N: 276,728ft E: 1,625,486ft  
LAT: 39°15'07.97" LON: 80°49'21.08"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS 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 AH TOP HOLE INFORMATION:  
N: 4,342,664m E: 516,941m  
BOTTOM HOLE INFORMATION:  
N: 4,344,790m E: 515,328m

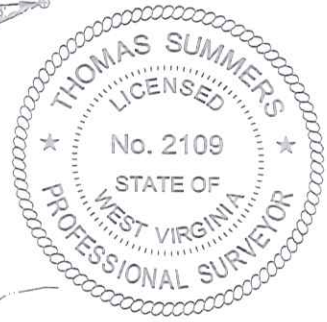


- NOTE:
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES 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.

WV NORTH ZONE GRID NORTH



NOTE: NO WATER WELLS WERE LOCATED WITHIN 2000' OF THE CENTER OF PAD



JOB # 19-002WA  
DRAWING # OXFORD97AH  
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

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X

LOCATION: ELEVATION 1,333' AS BUILT  
QUADRANGLE OXFORD 7.5' (THL) - WEST UNION 7.5' (BHL) DISTRICT WEST UNION COUNTY DODDRIDGE

SURFACE OWNER HAESSLY LAND & TIMBER LLC  
OIL & GAS ROYALTY OWNER DOUGLAS C. STUART: RITCHIE & PAULINE BRITTON:  
CHARTER D. STINESPRING: ADA PEARL HEFLIN

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

LEGEND

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

THOMAS SUMMERS P.S. 2109

DATE 04/07/20

OPERATOR'S WELL # OXFORD 97 AH

API WELL # 47 - 017 - 06482

STATE COUNTY PERMIT

ACREAGE 286.38 ACRES +/-

LEASE ACREAGE 286 AC±; 79 AC±; 89 AC±; 97.3 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 6,867' TVD 16,447' MD

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

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

COUNTY NAME

PERMIT