



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 "Megan 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 47-017-06481 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 BHS  
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 4342658m Easting 516941m  
Landing Point of Curve Northing 4342506.83m Easting 516198.03m  
Bottom Hole Northing 4344592m Easting 515226m

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 - 06481 Farm name Haessly Land & Timber LLC Well number Oxford 97 BHS

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"	59'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	892'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2992'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16449'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7783'		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) 16766' MD ,6877' TVD (BHL), 6878' (Deepest Point Drilled) Loggers TD (ft) 16766' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6200'

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 - 06481 Farm name Haessly Land & Timber LLC Well number Oxford 97 BHS

PERFORATION RECORD

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

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)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								

Please insert additional pages as applicable.

API 47- 017 - 06481 Farm name Haessly Land & Timber LLC Well number Oxford 97 BHS

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6775' (TOP)</u>	<u>TVD</u>	<u>7845' (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 4156 mcfpd Oil 61 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

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

**API 47-017-06481 Farm Name Haessly Land & Timber LLC Well Number Oxford 97 BHS**

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/11/2019	16267	16101.99	60	Marcellus
2	10/11/2019	16066.588	15901.578	60	Marcellus
3	10/11/2019	15866.176	15701.166	60	Marcellus
4	10/12/2019	15665.764	15500.754	60	Marcellus
5	10/12/2019	15465.352	15300.342	60	Marcellus
6	10/12/2019	15264.94	15099.93	60	Marcellus
7	10/13/2019	15064.528	14899.518	60	Marcellus
8	10/13/2019	14864.116	14699.106	60	Marcellus
9	10/13/2019	14663.704	14498.694	60	Marcellus
10	10/14/2019	14463.292	14298.282	60	Marcellus
11	10/14/2019	14262.88	14097.87	60	Marcellus
12	10/14/2019	14062.468	13897.458	60	Marcellus
13	10/14/2019	13862.056	13697.046	60	Marcellus
14	10/15/2019	13661.644	13496.634	60	Marcellus
15	10/15/2019	13461.232	13296.222	60	Marcellus
16	10/15/2019	13260.82	13095.81	60	Marcellus
17	10/15/2019	13060.408	12895.398	60	Marcellus
18	10/16/2019	12859.996	12694.986	60	Marcellus
19	10/16/2019	12659.584	12494.574	60	Marcellus
20	10/16/2019	12459.172	12294.162	60	Marcellus
21	10/17/2019	12258.76	12093.75	60	Marcellus
22	10/17/2019	12058.348	11893.338	60	Marcellus
23	10/17/2019	11857.936	11692.926	60	Marcellus
24	10/17/2019	11657.524	11492.514	60	Marcellus
25	10/18/2019	11457.112	11292.102	60	Marcellus
26	10/18/2019	11256.7	11091.69	60	Marcellus
27	10/18/2019	11056.288	10891.278	60	Marcellus
28	10/19/2019	10855.876	10690.866	60	Marcellus
29	10/19/2019	10655.464	10490.454	60	Marcellus
30	10/20/2019	10455.052	10290.042	60	Marcellus
31	10/20/2019	10254.64	10089.63	60	Marcellus
32	10/20/2019	10054.228	9889.218	60	Marcellus
33	10/20/2019	9853.816	9688.806	60	Marcellus
34	10/20/2019	9653.404	9488.394	60	Marcellus
35	10/21/2019	9452.992	9287.982	60	Marcellus
36	10/21/2019	9252.58	9087.57	60	Marcellus
37	10/21/2019	9052.168	8887.158	60	Marcellus
38	10/22/2019	8851.756	8686.746	60	Marcellus
39	10/22/2019	8651.344	8486.334	60	Marcellus
40	10/22/2019	8450.932	8285.922	60	Marcellus
41	10/23/2019	8250.52	8085.51	60	Marcellus
42	10/23/2019	8050.108	7885.098	60	Marcellus

**API 47-017-06481 Farm Name Haessly Land & Timber LLC Well Number Oxford 97 BHS**

**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	82.83787	8406.618	5703	4470	399900	7489.41	N/A
2	10/11/2019	80.2368	8114.071	5170	4674	400250	7568.814	N/A
3	10/11/2019	85.23474	8226.956	5502	3987	399800	7090.46	N/A
4	10/12/2019	75.90186	7486.5	6386	4640	400150	7193.31	N/A
5	10/12/2019	81.38008	7863.235	5451	4198	400100	7234.16	N/A
6	10/12/2019	81.65245	8289.537	5717	3565	399400	7082.387	N/A
7	10/13/2019	84.34457	8472.206	5937	3451	400200	7121.22	N/A
8	10/13/2019	83.20353	8295.015	5732	3253	400400	7122.38	N/A
9	10/13/2019	84.03239	8514.859	5764	3423	399950	7044.41	N/A
10	10/14/2019	81.56068	8237.065	5696	3820	400350	7251.17	N/A
11	10/14/2019	79.19547	8013.739	5530	3513	400200	6866.6	N/A
12	10/14/2019	78.00082	8091.817	5906	3623	401350	7015.18	N/A
13	10/14/2019	72.47218	7813.618	6181	3304	399700	7679.14	N/A
14	10/15/2019	80.3663	8534.489	5780	3651	400550	7011.59	N/A
15	10/15/2019	82.02966	8050.517	5723	3899	400150	6921.58	N/A
16	10/15/2019	84.58933	8159.257	5849	3396	400250	7151.84	N/A
17	10/15/2019	79.8876	8012.575	6063	3348	401500	6908.22	N/A
18	10/16/2019	77.91896	7828.406	5500	3812	400648.5567	8372.23	N/A
19	10/16/2019	82.29868	8170.368	5580	3432	389250.4724	7165.59	N/A
20	10/16/2019	82.53252	8467.548	5588	3594	399750	6925.39	N/A
21	10/17/2019	82.42038	8515.168	5740	3432	399800	6949.59	N/A
22	10/17/2019	82.29097	8195.641	5856	3573	398600	7604.63	N/A
23	10/17/2019	86.02133	8065.969	6091	3514	400200	7076.52	N/A
24	10/17/2019	86.0918	7898.617	5117	3507	399500	6909.16	N/A
25	10/18/2019	84.22194	8284.314	5376	3225	398900	6935.26	N/A
26	10/18/2019	79.27552	7390.941	6014	3192	403850	6934.52	N/A
27	10/18/2019	77.55097	8509.861	5965	4228	405500	6892.27	N/A
28	10/19/2019	82.32903	7977.25	5756	3137	404050	6937.96	N/A
29	10/19/2019	84.93682	8118.657	4884	2953	402850	6946.36	N/A
30	10/20/2019	64.4187	8256.988	5579	3941	403600	8619.195	N/A
31	10/20/2019	80.2447	7731.946	5883	3284	404300	6879.47	N/A
32	10/20/2019	79.8024	7119.531	5390	3378	404150	6875.12	N/A
33	10/20/2019	86.22021	7505.557	5619	3795	402600	6817.52	N/A
34	10/20/2019	87.33805	7689.209	5231	3661	403200	6818.47	N/A
35	10/21/2019	80.66656	7432.25	5676	3504	404100	7955.58	N/A
36	10/21/2019	84.69097	7423.339	5549	3208	405500	6873.89	N/A
37	10/21/2019	86.55129	7645.072	6020	3434	403900	6826.09	N/A
38	10/22/2019	79.50085	8302.744	5244	3529	403250	7030.46	N/A
39	10/22/2019	79.79453	7029.697	5685	3539	404050	6830.1	N/A
40	10/22/2019	76.64395	6991.068	5037	3138	404200	6775.64	N/A
41	10/23/2019	80.9149	6967.636	5406	3246	404200	6767.71	N/A
42	10/23/2019	77.5642	6735.372	5808	2983	403400	6782.11	N/A
	<b>AVG</b>	<b>81.2</b>	<b>7,925</b>	<b>5,659</b>	<b>3,582</b>	<b>16,857,549</b>	<b>299,253</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	1,947	1,790	N/A
Big Lime	1,947	2,620	1,947	2,620
Fifty Foot Sandstone	2,620	2,702	2,620	2,702
Gordon	2,702	2,966	2,702	2,966
Fifth Sandstone	2,966	3,074	2,966	3,074
Bayard	3,074	3,854	3,074	3,907
Speechley	3,854	4,092	3,907	4,179
Balltown	4,092	4,547	4,179	4,701
Bradford	4,547	4,996	4,701	5,223
Benson	4,996	5,276	5,223	5,547
Alexander	5,276	6,616	5,547	7,221
Sycamore	6,410	6,598	6,919	7,203
Middlesex	6,598	6,719	7,221	7,592
Burkett	6,719	6,744	7,610	7,689
Tully	6,744	6,775	7,707	7,845
Marcellus	6,775	NA	7,845	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: 47-017-06482 County: Doddridge  
District: West Union Well No: OXFD97 BHS  
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/Bl
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"

3,460'

LATITUDE 39°17'30"

LONGITUDE 80°47'30"

6,202'

LONGITUDE 80°47'30"

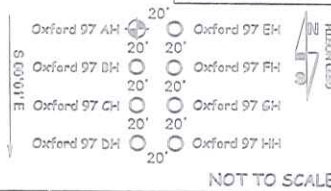
15,018' TO BOTTOM HOLE

Antero Resources Corporation  
Well No. Oxford 97 BH

AS DRILLED DATA:  
WELL BH TOP HOLE INFORMATION:  
N: 269,644ft E: 1,630,663ft  
LAT: 39°13'58.70" LON: 80°48'13.98"  
BOTTOM HOLE INFORMATION:  
N: 276,085ft E: 1,625,139ft  
LAT: 39°15'01.56" LON: 80°49'25.38"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. SYSTEM 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.

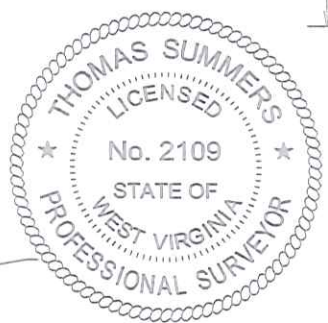
(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL BH TOP HOLE INFORMATION:  
N: 4,342,658m E: 516,941m  
BOTTOM HOLE INFORMATION:  
N: 4,344,592m E: 515,226m

PAD LAYOUT



- 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 HEREIN 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 LEASER'S BOUNDARIES.
- 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

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



JOB # 19-002WA  
DRAWING # OXFORD97BH  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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 BH

API WELL # 47 - 017 - 06481

STATE COUNTY PERMIT

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 WATERSHED HEADWATERS MIDDLE ISLAND CREEK

QUADRANGLE OXFORD 7.5' (THL) - WEST UNION 7.5' (BHL) DISTRICT WEST UNION COUNTY DODDRIDGE

SURFACE OWNER HAESSLY LAND & TIMBER LLC ACREAGE 266.38 ACRES +/-

OIL & GAS ROYALTY OWNER DOUGLAS C. STUART: RITCHIE & PAULINE BRITTON: LEASE ACREAGE 266 AC±; 79 AC±;

S.S. COX ET AL.: CHARTER D. STINESPRING: ADA PEARL HEFLIN 65.6 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

TARGET FORMATION MARCELLUS PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_

WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 6,877' TVD 16,766' MD

ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD

FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT