



west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, April 1, 2020  
WELL WORK PLUGGING PERMIT  
Horizontal 6A Plugging

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for OXFD13BHS  
47-017-06457-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief

A blue ink signature of James A. Martin, written in a cursive style.

Operator's Well Number: OXFD13BHS  
Farm Name: MORRIS, I.L.  
U.S. WELL NUMBER: 47-017-06457-00-00  
Horizontal 6A Plugging  
Date Issued: 4/1/2020

Promoting a healthy environment.

## PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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### CONDITIONS

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

1) Date \_\_\_\_\_, 20\_\_\_\_  
2) Operator's  
Well No. OXFD13 BHS  
3) API Well NO. 47-017 - 06457

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil \_\_\_\_/ Gas X/ Liquid injection \_\_\_\_/ Waste disposal \_\_\_\_/  
(If "Gas, Production \_\_\_\_ or Underground storage \_\_\_\_) Deep \_\_\_\_/ ShallowX

5) Location: Elevation 1152.4' Watershed South Fork Hughes River  
District Southwest County Doddridge Quadrangle Oxford 7.5'

6) Well Operator Antero Resources Corporation 7) Designated Agent CT Corporation System - Dianna Stamper  
Address 1615 Wynkoop Street Address 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313

8) Oil and Gas Inspector to be notified Name Daniel Flack  
Address 601 57th Street SE  
Charleston, WV 25304  
9) Plugging Contractor Name N/A - Antero will plug well  
Address \_\_\_\_\_

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10) Work Order: The work order for the manner of plugging this well is as follows: MAR 24 2020

**\*Please See Attached Work Order**

WV Department of  
Environmental Protection

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector *Daniel Flack* Date 3-17-2020

47-017-06457P



ANTERO RESOURCES  
1615 Wynkoop St.  
Denver, CO 80202  
Office: 303.357.7310  
Fax: 303.357.7315

**OXFD 13BHS**  
**Doddridge County, WV**  
API #47-017-06457

**Objective:** Plug and Abandon Marcellus Wellbore.

**Well Design:**

- 20" Conductor @ 60'
- 13-3/8" Surface Casing @ 1,062' (17-1/2" hole)
- 9-5/8" Intermediate Casing @ 2,817' (12-1/4" hole)
- 5-1/2" Production Casing @ 12,385' (8-1/2" hole)

**Procedure:**

1. Check and record all casing/annular surface pressures into Wellview
2. Notify WVDEP prior to commencing work.
  - a. Daniel Flack is Doddridge County WVDEP inspector
  - b. 304.545.0109
  - c. Daniel.a.flack@wv.gov
3. Move in and rig up flat tank and frac tank (No pits will be utilized).
4. MIRU service unit.
5. If zero pressure, ND frac valve and NU BOP's on tubing head.
6. Lubricate out BPV in wellhead hanger through BOP's. Verify zero pressure in 5 1/2" casing.
7. Pick up 2-3/8" tubing open ended and trip in hole with singles to ~~6,000'~~ 6400'. *gwm*
8. MIRU cement services. Mix and pump a 200' cement plug (Class A cement + 2% CaCl<sub>2</sub>, zero excess, yield = 1.15 ft<sup>3</sup>/sk, WR = 5.2 gal/sk)
  - a. 5 1/2", 20# volume = 0.1245 ft<sup>3</sup>/ft
  - b. 200' plug = 25 ft<sup>3</sup> cement.
  - c. Displace to balance plug with fresh water treated with 6% gel
  - d. Slowly pull out of cement plug and lay down 300' of 2-3/8" tubing
  - e. Reverse circulate tubing clear of cement with fresh water treated 6% gel
  - f. Wait on cement 8hrs.
  - g. RIH w/ tubing and tag TOC at approximately ~~5,800'~~ 6200'. *gwm*
9. Load remaining 5 1/2" casing with fresh water treated with 6% gel (130 bbls).
10. TOOH laying down tubing in singles.
11. Rig up 5 1/2" casing cutter and RIH to 2,400' - correlate with CBL run on 2/12/20. Free pipe is estimated at 2,250'. Plan on cutting casing at approximately 2,200' in the middle of a casing joint.
12. Rig up casing jacks if needed and pull 5 1/2" casing free above 2,200'. *MAY PUMP CEMENT THROUGH 5 1/2" CASING AS TRIPPING C*
13. If 5 1/2" casing pulls free, determine if cement plugs can be pumped down 5 1/2" casing after the cut and while laying down the casing. If so, pump the following plugs from surface down casing. *OUT OF HOLE WITH CUT STRING. gwm*
14. **if pumping plug down 5 1/2" casing**, mix & pump a 200' cement plug using Class A cement + 2% CaCl<sub>2</sub>, (20% excess included yield = 1.15 ft<sup>3</sup>/sk, WR = 5.2 gal/sk). Plug should cover 200' above cut casing.
  - a. Trip out of hole and wait on cement
  - b. Tag TOC 200' above 5 1/2" casing cut at approximately 2,000'
  - c. *ADD CEMENT IF NEEDED,*

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3-17-20*

15. If cement plug is required 100' above casing cut and 100' below casing cut, 2-3/8" tubing will need to be run back in the well after 5 1/2" casing is laid down. This plug will be inside of 9-5/8" casing. Determine the total length of 5 1/2" casing laid down.
- Volume inside of 9-5/8", 36# casing = 0.4340 ft<sup>3</sup>/ft
  - 200' plug = 87 ft<sup>3</sup> cement
  - Displace to balance plug with fresh water treated with 6% gel
  - Slowly pull out of cement plug and lay down 300' of 2-3/8" tubing
  - Reverse circulate tubing clear of cement with fresh water treated 6% gel
  - Wait on cement 8hrs.
  - RIH w/ tubing and tag TOC at approximately 2,100'
16. Pump a <sup>250'</sup> 200' elevation balance plug from 1,250' to <sup>1000'</sup> 1,050' using ~~87 ft<sup>3</sup>~~ of Class A cement + 2% CaCl<sub>2</sub>, zero excess, yield = 1.15 ft<sup>3</sup>/sk, WR = 5.2 gal/sk).
- Volume inside of 9-5/8", 36# casing = 0.4340 ft<sup>3</sup>/ft
  - 200' plug = 87 ft<sup>3</sup> cement
  - Displace to balance plug with fresh water treated with 6% gel
  - Slowly pull out of cement plug and lay down 300' of 2-3/8" tubing
  - Reverse circulate tubing clear of cement with fresh water treated 6% gel
  - Wait on cement 8hrs.
  - RIH w/ tubing and tag TOC at approximately ~~1,050'~~ 1000'. **ADD CEMENT IF NEEDED,**
17. Mix and pump the final cement plug to fill up 9-5/8" casing from <sup>330'</sup> 300' to surface.
18. 131 ft<sup>3</sup> Class A cement + 2% CaCl<sub>2</sub>, zero excess, yield = 1.15 ft<sup>3</sup>/sk, WR = 5.2 gal/sk)
- Volume inside of 9-5/8", 36# casing = 0.4340 ft<sup>3</sup>/ft
  - <sup>300'</sup> plug = 131 ft<sup>3</sup> cement
  - Slowly pull out of cement plug while laying down 300' of 2-3/8" tubing
  - Clean up tubing if possible
  - Wait on cement 8hrs.
  - Observe top of cement at surface.
19. Cut off casing at 3' below ground level.
20. Weld marker plate with API No.: 47-017-06457

SET MONUMENT PER WV STATE CODE.

DAF  
3-17-2020

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

API 47-017-06457H6A County Doddridge District Southwest  
Quad New Milton 7.5' Pad Name OXFD13HS Field/Pool Name Oxford  
Farm Name I. L. MORRIS Well Number OXFD13BHS  
Operator (as registered with the OOG) CNX Gas Company LLC  
Address P.O. Box 1248 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top Hole Northing 4,335,536. m Easting 521,793. m  
Landing Point of Curve Northing 4,335,692. m Easting 521,579. m  
Bottom Hole Northing 4,339,041. m Easting 520,297. m

Elevation (ft) 1180' 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

Drilled 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)  
Mineral Oil Based Mud, Bactericide, Polymers and Weighting Agents.

Date Permit Issued 04/15/2014 Date drilling commenced 05/17/2015 Date drilling ceased 07/23/2015  
Date completion activities began N/A (Completion has not begun.) Date completion activities ceased N/A  
Verbal plugging (Y/N) N 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 290 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 2175, 2510 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 294, 1650 Cavern(s) encountered (Y/N) depths N/A  
Is coal being mined in area (Y/N) N

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Kevin  
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Environmental Protection  
WS AY 06/17/16

WR-35

Rev. 8/23/13

API 47-017-06457H6A

Farm name L. L. MORRIS

Well number OXFD13BHS

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement Circulate (Y/N) * Provide details to the right *
Conductor	26"	20"	88.5'	N	J-55 94# / 88.5'	N/A	N (grout)
Surface	17 1/2"	13 3/8"	1085.9'	N	J-55 54.5# / 1085.9'	N/A	Y
Coal	-	-	-	-	-	-	-
Intermediate 1	12 1/4"	9 5/8"	2848.7'	N	J-55 36# / 2848.7'	N/A	Y
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	8 3/4" & 8 1/2"	5 1/2"	12391'	N	P-110 20# / 12391'	N/A	Y
Tubing	N/A (Tubing	has not been	run.)	-	-	-	-
Packer Type and Depth Set		None					

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	675	15.60	1.22	820	0'	24
Surface	Class A	820	15.66	1.20	984	0'	8
Coal	-	-	-	-	-	-	-
Intermediate 1	Class A	980	15.60	1.18	1156.4	0'	8
Intermediate 2	-	-	-	-	-	-	-
Intermediate 3	-	-	-	-	-	-	-
Production	Class A (Lead) / Class A (Tail)	958 / 1242	14.20 / 14.80	1.24 / 1.23	1187.92 / 1527.66	-	8
Tubing	N/A (Tubing has not	been run.)	-	-	-	-	-

Drillers TD (ft) 6175'

Loggers TD (ft) 7047'

Deepest formation penetrated: Marcellus

Plug back to (ft) N/A

Plug back procedure: N/A

Kick Off Depth (ft) 6175'

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 - No centralizers used. Fresh Water - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface. Coal - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface. Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve. (Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS N/A (Well has not been completed.)

WAS WELL COMPLETED OPEN HOLE  Yes  No DETAILS N/A (Well has not been completed.)

WERE TRACERS USE  Yes  No TYPES OF TRACER(S) USED N/A (Well has not been completed.)

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API 47-017-06457H6A Farm name L. L. MORRIS Well number OXFD13BHS

**PERFORATION RECORD**

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number Of Perforations	Formation(s)

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Avg Pump Rate (BPM)	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen / other (gals)

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Please insert additional pages as applicable.





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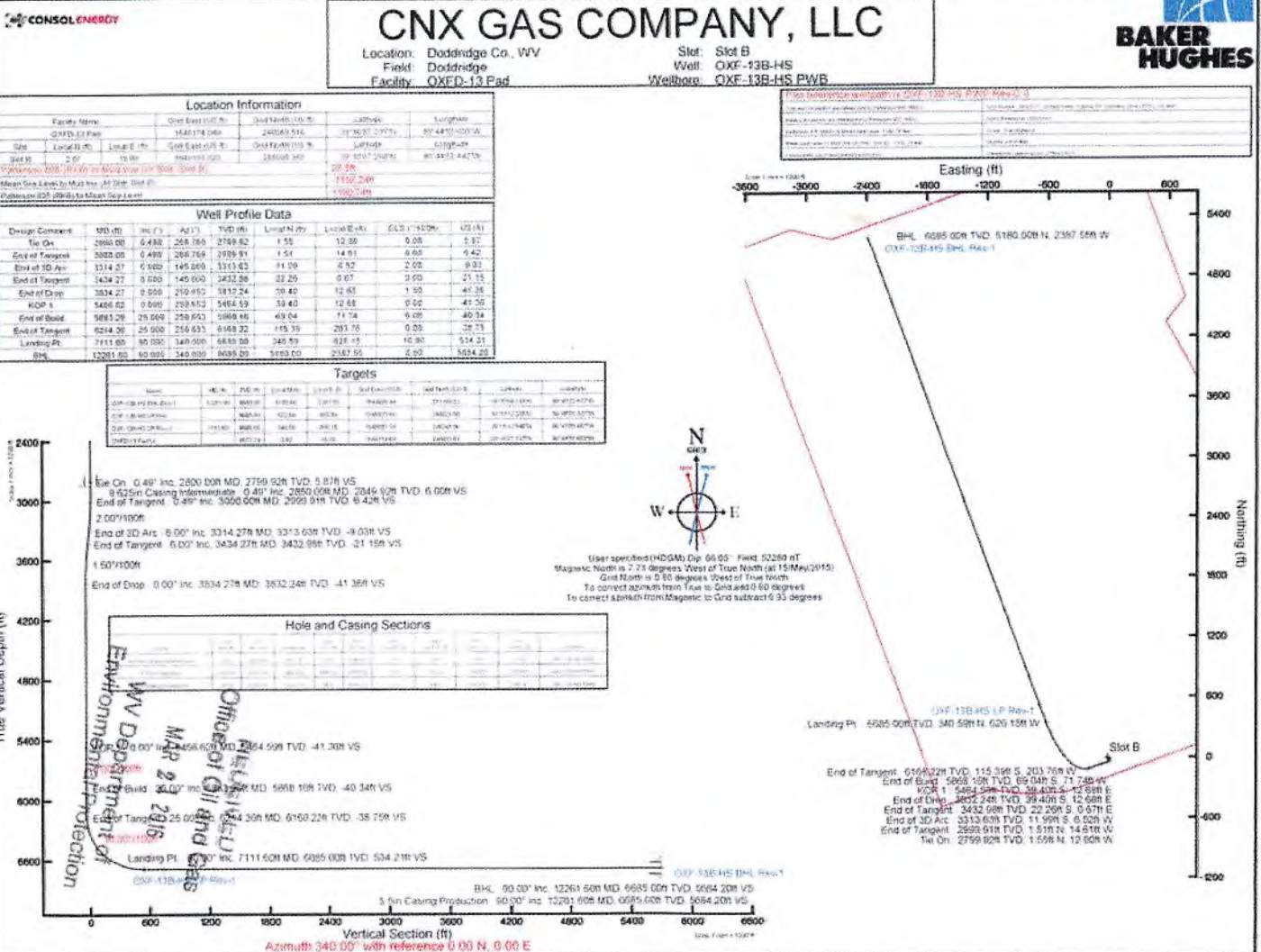
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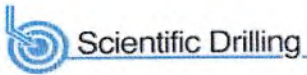
API 47-017-06457H6A Farm name J. L. MORRIS Well number OXFD13BHS

LITHOLOGY / FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY TYPE OF FLUID (FRESHWATER,BRINE,GAS,H2S, ETC)
	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT	
	TVD	TVD	MD	MD	
FILL	0	50			
SAND/SHALE	50	100			
SHALE	100	150			
SAND/SHALE	150	250			
REDROCK/COAL	250	300			
SHALE/REDROCK	300	350			
SHALE	350	400			
SAND/SHALE	400	450			
SHALE	450	500			
REDROCK/SHALE	500	600			
SHALE/SAND	600	650			
SAND	650	750			
SHALE	750	850			
SAND	850	950			
SHALE/REDROCK	950	1000			
REDROCK	1000	1050			
SHALE	1050	1100			
SAND	1100	1200			
SHALE	1200	1300			
SAND	1300	1500			
SHALE	1500	1600			
SAND/COAL	1600	2000			
LITTLE LIME	2000	2041			Light Gray
BIG LIME	2050	2142			Light Gray/Brown
BIG INJUN	2184	2250			Light Gray
WEIR SAND	2309	2510			Gray
GORDON SAND	2794	2802			Med Gray
BENSON SAND	5054	5097			Med/Dark Gray
ALEXANDER SAND	5302	5405			Med/Dark Gray
RHINESTREET SHALE	5576	6668			Dark Gray
MIDDLESEX SHALE	6669	6795			Dark Gray
BURKET SHALE	6795	6841			Black
TULLY LIMESTONE	6841	6862			Light Gray
HAMILTON SHALE	6862	6894			Light/Med Gray
MARCELLUS SHALE	6894	6951			Black
ONONDAGA LIMESTONE	6951	7000			Light Brown
HUNTERSVILLE CHERT	7000	7047			Light/Med Gray
TD PILOT	7047				

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47-017-06457P



Scientific Drilling  
Northeast District

Company: CNX  
Field: Marcellus  
Well: **OXF-13B-HS**  
County: Doddridge County  
State: WV  
Rig: Patterson-UT1 805  
MWD: A Stone / N Bare

Date: March 16, 2016  
North Ref: Grid  
Declination: -7.73  
VS Azi: 250.65  
RKB-GL: 28.5

MD	Incl	Azim	TVD	VS	H/S	E/W	DLS	ClsD	ClsA	Course
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg	Length

VES GYRO SURVEYS: 100 FT. - 2800 FT.

SDI SURVEYS: 2997 FT. - 6138 FT

BHI SURVEYS: LAST SURVEY IS A PROJECTION TO BOTTOM HOLE LOCATION, 6214 FT

Measured Depth	Inclination	Azimuth	True Vertical Depth	Vertical Section	+N/-S	+E/-W	Dogleg Severity	Closure Distance	Closure Direction	Course Length
ft	deg	deg	ft	ft	ft	ft	/100ft	ft	deg	ft
0	0	226.32	0	0	0	0	Invalid	0	0	0 Invalid
28.5	0	226.32	28.5	0	0	0	0	0	0	28.5
100	0.95	226.32	100	0.54	-0.41	-0.43	1.33	0.59	226.32	71.5
200	0.64	231.76	199.99	1.83	-1.33	-1.47	0.32	1.98	227.85	100
300	0.39	236.21	299.98	2.69	-1.86	-2.19	0.25	2.87	229.6	100
400	0.44	240.81	399.98	3.39	-2.24	-2.81	0.06	3.59	231.42	100
500	0.56	254.81	499.98	4.26	-2.55	-3.61	0.17	4.42	234.74	100
600	0.59	265.58	599.97	5.24	-2.72	-4.6	0.11	5.34	239.37	100
700	0.64	283.3	699.97	6.21	-2.83	-5.66	0.2	6.24	245.03	100
800	0.54	303.26	799.96	6.96	-2.25	-6.59	0.23	6.96	251.18	100
900	0.41	319.14	899.96	7.38	-1.72	-7.22	0.18	7.42	256.62	100
1000	0.3	326.56	999.96	7.57	-1.23	-7.6	0.12	7.7	260.82	100
1100	0.21	335.11	1099.95	7.65	-0.84	-7.82	0.1	7.87	263.84	100
1200	0.27	337.85	1199.95	7.68	-0.46	-7.99	0.06	8	266.71	100
1300	0.68	348.75	1299.95	7.6	0.34	-8.19	0.42	8.2	272.38	100
1400	0.54	0.43	1399.94	7.36	1.39	-8.3	0.19	8.42	279.53	100
1500	0.56	8.17	1499.94	6.97	2.35	-8.23	0.08	8.56	285.93	100
1600	0.31	32.65	1599.94	6.53	3.06	-8.01	0.31	8.58	290.9	100
1700	0.4	166.92	1699.94	6.35	2.95	-7.79	0.66	8.33	290.73	100
1800	0.15	165.54	1799.93	6.41	2.48	-7.68	0.25	8.07	287.91	100
1900	0.36	237.34	1899.93	6.72	2.19	-7.91	0.34	8.21	285.45	100
2000	0.14	262.4	1999.93	7.15	2	-8.3	0.24	8.53	283.55	100
2100	0.26	271.25	2099.93	7.48	1.99	-8.64	0.12	8.87	282.96	100
2200	0.25	262.94	2199.93	7.9	1.97	-9.09	0.04	9.3	282.21	100
2300	0.29	259.69	2296.93	8.37	1.89	-9.55	0.04	9.74	281.22	100
2400	0.41	258.34	2399.93	8.97	1.78	-10.15	0.12	10.31	279.93	100
2500	0.31	263.48	2499.93	9.59	1.67	-10.77	0.1	10.9	278.83	100
2600	0.38	267.55	2599.92	10.17	1.63	-11.37	0.07	11.49	278.15	100
2700	0.44	265.71	2699.92	10.86	1.59	-12.09	0.06	12.19	277.48	100
2800	0.49	268.76	2799.92	11.63	1.55	-12.9	0.06	12.99	276.85	100
2907	1.16	276.57	2906.91	13.04	1.66	-14.43	0.64	14.53	276.57	107

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3000	1.29	207.04	2999.89	14.66	0.84	-15.85	1.51	15.87	273.02	93
3094	1.98	181.8	3093.85	16.02	-1.74	-16.38	1.05	16.48	263.95	94
3188	2.4	156.24	3187.79	16.47	-5.16	-15.64	1.12	16.47	251.73	94
3281	3.73	152.04	3280.65	15.88	-9.61	-13.44	1.45	16.53	234.42	93
3375	5.67	149.73	3374.33	14.57	-16.33	-9.66	2.08	18.97	210.82	94
3468	5.1	136.5	3466.92	12.04	-23.3	-4.5	1.47	23.73	190.93	93
3562	4.25	134.9	3560.61	8.84	-28.79	0.84	0.92	28.8	178.33	94
3656	3.52	151.59	3654.39	6.89	-33.78	4.68	1.42	34.11	172.11	94
3750	2.69	152.6	3748.26	6.15	-38.28	7.07	0.89	38.93	169.54	94
3844	2.08	151.26	3841.17	5.57	-41.74	8.91	0.66	42.68	167.96	94
3937	1.49	141.42	3935.13	4.91	-44.16	10.47	0.71	45.38	166.66	93
4031	1.54	108.94	4029.1	3.33	-45.52	12.42	0.9	47.19	164.74	94
4124	2.42	82.57	4122.04	0.64	-45.67	15.54	1.34	48.25	161.2	93
4218	3.4	73.09	4215.92	-4.08	-44.61	20.17	1.16	48.96	155.67	94
4311	3.33	63.51	4308.76	-9.52	-42.6	25.23	0.61	49.51	149.37	93
4405	3.79	64.2	4402.58	-15.31	-40.03	30.47	0.49	50.31	142.73	94
4499	2.83	74.73	4496.42	-20.72	-38.07	35.5	1.2	52.06	137	94
4592	2.9	74.36	4589.31	-25.36	-36.83	39.99	0.08	54.37	132.64	93
4686	2.32	66.1	4683.21	-29.64	-35.42	44.02	0.73	56.5	128.82	94
4779	1.88	43.86	4776.15	-32.88	-33.55	46.8	0.99	57.59	125.64	93
4873	1.27	227.23	4870.14	-33.3	-33.15	47.11	3.35	57.6	125.14	94
4967	5.73	239.67	4963.94	-27.73	-36.23	42.29	4.78	55.69	130.58	94
5061	9.59	255.44	5057.09	-15.32	-40.57	30.66	4.64	50.85	142.92	94
5154	8.92	251.56	5148.88	-0.39	-44.79	16.32	0.98	47.67	159.98	93
5248	8.85	250.23	5241.75	14.13	-49.55	2.6	0.23	49.61	177	94
5341	7.64	244.29	5333.79	27.44	-54.65	-9.71	1.6	55.5	190.07	93
5435	10.04	243.83	5426.67	41.76	-60.97	-22.69	2.55	65.06	200.41	94
5529	13.67	244.52	5518.61	61.14	-69.44	-40.22	4.08	80.24	210.08	94
5622	12.36	235.16	5609.19	81.83	-79.92	-58.46	2.8	99.02	216.18	93
5716	11.06	230.7	5701.24	100.02	-91.38	-73.7	1.69	117.39	218.89	94
5810	11.54	233.56	5793.41	117.51	-102.68	-88.24	0.78	135.38	220.67	94
5904	16.22	249.73	5884.68	139.65	-112.82	-108.13	6.42	156.27	223.78	94
5997	19.76	251.06	5973.12	168.35	-122.16	-135.27	3.88	182.27	227.92	93
6091	20.86	255.66	6061.28	200.92	-131.37	-166.56	1.62	212.14	231.74	94
6188	22.09	256.23	6105.01	218.06	-135.63	-183.23	2.76	227.97	233.49	47
6214	24.89	258.01	6174.71	248.13	-142.36	-212.76	3.81	255.99	236.21	76

**WR-35**  
**Rev. 8/23/13**

**FRAC FOCUS REGISTRY**

API **47-017- 06457H6A**

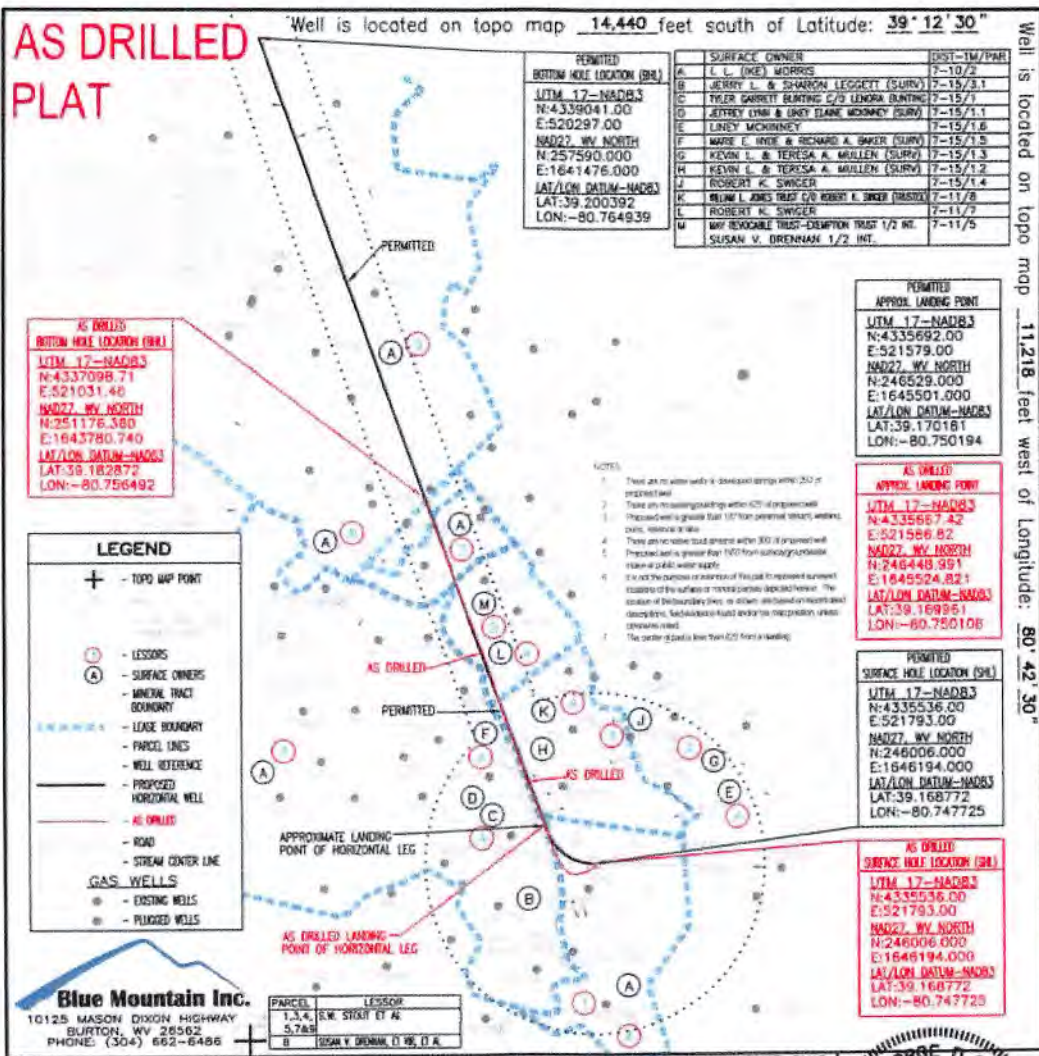
Farm Name **LL. MORRIS**

Well Number **OXFD13BHS**

*Frac Focus Registry – Not Available – Formations have not been perforated or stimulated*

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MAR 21 2016  
WV Department of  
Environmental Protection

47-017-06457P



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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *George D. Six*  
R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000

**GEORGE D. SIX**  
LICENSED  
No. 2000  
STATE OF WEST VIRGINIA  
PROFESSIONAL SURVEYOR

Office of Oil and Gas

DATE: DECEMBER 29, 2016  
OPERATOR'S WELL: OXFD13BHS-AS DRILLED  
API WELL #: 47  
STATE COUNTY: WV Putnam

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25304

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: SOUTH FORK HUGHES RIVER ELEVATION: 1,180'

COUNTY/DISTRICT: DODDRIDGE / SOUTHWEST QUADRANGLE: NEW MILTON 7.5'

SURFACE OWNER: L.L. MORRIS ACREAGE: 6603.75±

OIL & GAS ROYALTY OWNER: S.W. STOUT ET AL ACREAGE: 1427±, 236±, 417±, & 340±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,764'± TMD: 12,414'±

WELL OPERATOR CNX GAS COMPANY, LLC. DESIGNATED AGENT ANTHONY KENDZIORA  
Address P.O. BOX 1248 Address P.O. BOX 1248  
City JANE LEW State WV Zip Code 26378 City JANE LEW State WV Zip Code 26378

WW-4A  
Revised 6-07

1) Date: \_\_\_\_\_  
2) Operator's Well Number  
OXFD13 BHS

3) API Well No.: 47 - 017 - 06457

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>I.L. Morris</u>	Name <u>[Signature]</u>
Address <u>PO Box 397</u>	Address _____
<u>Glennville, WV 26351</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Daniel Flack</u>	(c) Coal Lessee with Declaration
Address <u>601 57th Street SE</u>	Name _____
<u>Charleston, WV 26149</u>	Address _____
Telephone _____	_____

**TO THE PERSONS NAMED ABOVE:** You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator Antero Resources Corporation  
 By: Diana Hoff [Signature]  
 Its: Senior VP of Operations  
 Address 1615 Wynkoop Street  
Denver, CO 80202  
 Telephone 303-357-7310

Subscribed and sworn before me this 9<sup>th</sup> day of March 2020  
[Signature] Notary Public  
 My Commission Expires 3-13-2022

MEGAN GRIFFITH  
 NOTARY PUBLIC  
 STATE OF COLORADO  
 NOTARY ID 20184011666  
 MY COMMISSION EXPIRES MARCH 13, 2022

**Oil and Gas Privacy Notice**

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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47-017-06457P

WW-9  
(4/16)

API Number 47 - 017 - 06457  
Operator's Well No. OXFD13 BHS

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation

OP Code 494507062

Watershed (HUC 10) South Fork Hughes River

Quadrangle Oxford 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: No pit will be used at this site (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \*UIC Permit # will be provided on Form WR-34 )
- Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-34 )
- Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain Northwestern Landfill Permit #SWF-1025/ WV0109410)

Will closed loop system be used? If so, describe: Yes, fluids stored in tanks, cuttings removed offsite and taken to landfill.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

-If oil based, what type? Synthetic, petroleum, etc.

Additives to be used in drilling medium?

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc.

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)

-Landfill or offsite name/permit number?

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Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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 or imprisonment.

Company Official Signature Gretchen Kohler

Company Official (Typed Name) Gretchen Kohler

Company Official Title Sr. Environmental & Regulatory Manager

Subscribed and sworn before me this 9th day of MARCH, 2020

[Signature]

Notary Public

My commission expires 3.13.2022

MEGAN GRIFFITH  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID 20184011666  
MY COMMISSION EXPIRES MARC'

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 16.34 acres Prevegetation pH \_\_\_\_\_

Lime 2-4 Tons/acre or to correct to pH 6.5

Fertilizer type \_\_\_\_\_

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre  
Annual Ryegrass 40

Field Bromegrass 40

Seed Type lbs/acre  
Crownvetch 10-15

Tall Fescue 30

Please reference Table IV-3 on page 7 of the OXFD13 BHS Plugging Plan

Please reference Table IV-4A on page 7 of the OXFD13 BHS Plugging Plan

\*or type of grass seed requested by surface owner

\*or type of grass seed requested by surface owner

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

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Plan Approved by: [Signature]

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title: Dil Gas Inspector

Date: 3-17-2020

Field Reviewed? ( ) Yes ( ) No

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas

**WELL LOCATION FORM: GPS**

API: 47-017-06457 WELL NO.: OXFD13BHS

FARM NAME: Morris, I L

RESPONSIBLE PARTY NAME: Antero Resources Corporation

COUNTY: Doddridge DISTRICT: Southwest

QUADRANGLE: New Milton

SURFACE OWNER: I L MORRIS

ROYALTY OWNER: N/A

UTM GPS NORTHING: 4335536.15 m (1152.4')

UTM GPS EASTING: 521793.06 m GPS ELEVATION: 351.3 m

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.

2. Accuracy to Datum – 3.05 meters

3. Data Collection Method:

Survey grade GPS  : Post Processed Differential

Real-Time Differential

Mapping Grade GPS  : Post Processed Differential

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

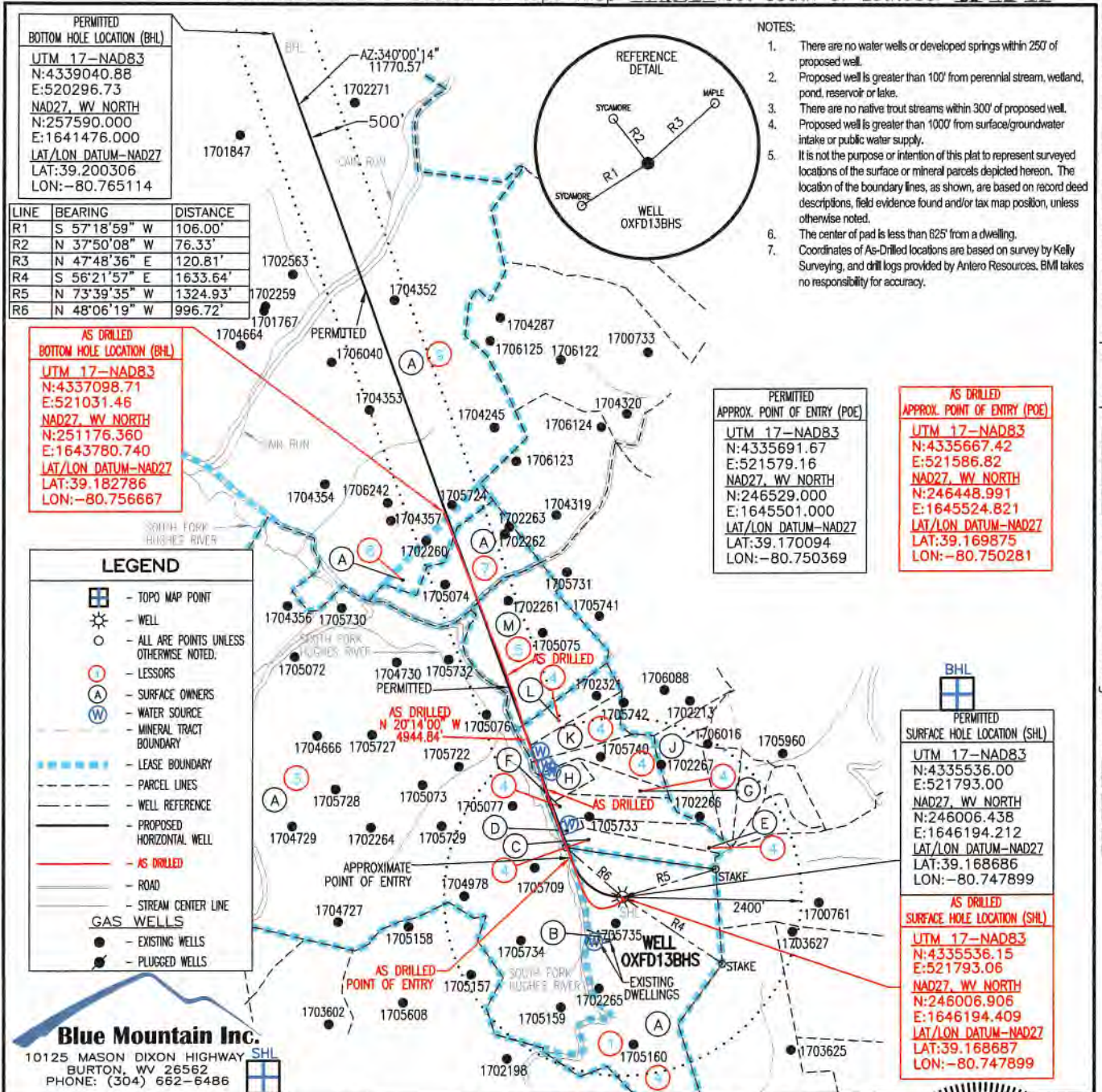
[Signature] PERMITTING AGENT 3-9-20  
Signature Title Date

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AS DRILLED BHL is located on topo map 9,274 feet south of Latitude: 39°12'30"  
 AS DRILLED SHL is located on topo map 14,392 feet south of Latitude: 39°12'30"



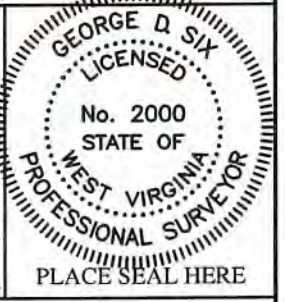
AS DRILLED BHL is located on topo map 1,840 feet west of Longitude: 80°45'00"  
 AS DRILLED SHL is located on topo map 11,166 feet west of Longitude: 80°42'30"

- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
  2. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
  3. There are no native trout streams within 300' of proposed well.
  4. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
  5. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
  6. The center of pad is less than 625' from a dwelling.
  7. Coordinates of As-Drilled locations are based on survey by Kelly Surveying, and drill logs provided by Antero Resources. BMI takes no responsibility for accuracy.

FILE #: OXFD13BHS  
 DRAWING #: OXFD13BHS  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: George D. Six  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304

DATE: FEBRUARY 05, 2018  
 OPERATOR'S WELL #: OXFD13BHS  
 API WELL #: 47 17 06457  
 STATE COUNTY PERMIT

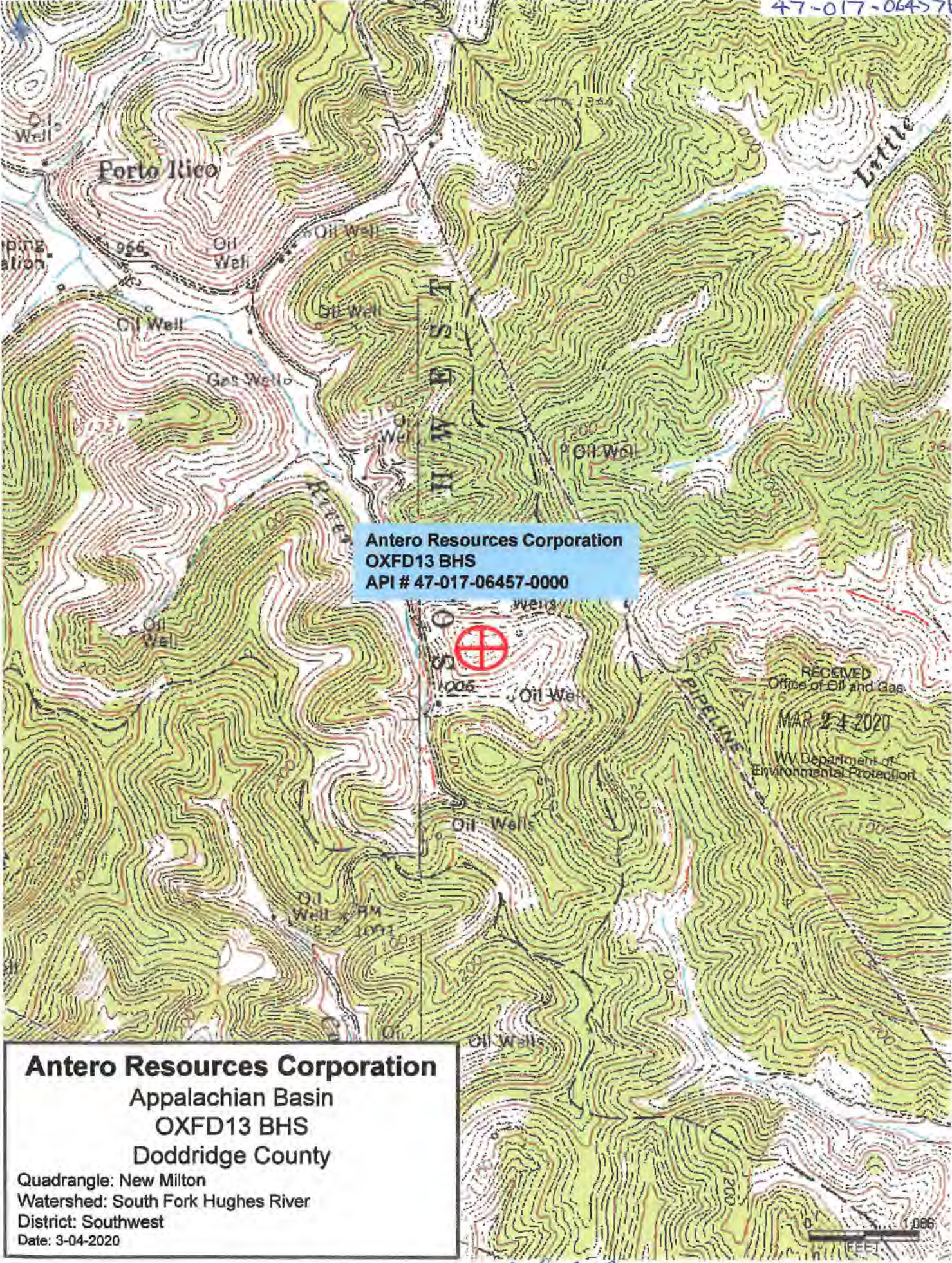
Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: SOUTH FORK HUGHES RIVER ELEVATION: 1,152.4'  
 COUNTY/DISTRICT: DODDRIDGE / SOUTHWEST QUADRANGLE: NEW MILTON, WV 7.5' (SHL) & OXFORD, WV 7.5' (BHL)  
 SURFACE OWNER: I. L. (IKE) MORRIS ACREAGE: 6603.75±  
 OIL & GAS ROYALTY OWNER: S. W. STOUT ET AL & SUSAN V. DRENNAN, ET VIR, ET AL ACREAGE: 1427±, 236±, 417±, & 340±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,764'± TMD: 12,414'±

WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER-CT CORPORATION SYSTEM  
 Address 1615 WYNKOOP STREET Address 5400 D BIG TYLER ROAD  
 City DENVER State CO Zip Code 80202 City CHARLESTON State WV Zip Code 25313



**Antero Resources Corporation**  
**OXFD13 BHS**  
**API # 47-017-06457-0000**

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**Antero Resources Corporation**  
Appalachian Basin  
OXFD13 BHS  
Doddridge County  
Quadrangle: New Milton  
Watershed: South Fork Hughes River  
District: Southwest  
Date: 3-04-2020

*John C. ...*  
3-17-2020

# OXFD13BHS

## PAGE 2 OF 2

	SURFACE OWNER	DIST-TM/PAR
A	I. L. (IKE) MORRIS	7-10/2
B	JERRY L. & SHARON LEGGETT (SURV)	7-15/3.1
C	TYLER GARRETT BUNTING C/O LENORA BUNTING	7-15/1
D	JEFFREY LYNN & LINEY ELAINE MCKINNEY (SURV)	7-15/1.1
E	LINEY MCKINNEY	7-15/1.6
F	MARIE E. HYDE & RICHARD A. BAKER (SURV)	7-15/1.5
G	KEVIN L. & TERESA A. MULLEN (SURV)	7-15/1.3
H	KEVIN L. & TERESA A. MULLEN (SURV)	7-15/1.2
J	ROBERT K. SWIGER	7-15/1.4
K	WILLIAM L. JONES TRUST C/O ROBERT K. SWIGER (TRUSTEE)	7-11/8
L	ROBERT K. SWIGER	7-11/7
M	MAY REVOCABLE TRUST-EXEMPTION TRUST 1/2 INT. SUSAN V. DRENNAN 1/2 INT.	7-11/5

PARCEL	LESSOR
1,3,4, 5,7&8	S.W. STOUT ET AL
9	SUSAN V. DRENNAN, ET AL

PERMITTED SURFACE HOLE LOCATION (SHL)	PERMITTED APPROX. POINT OF ENTRY (POE)	PERMITTED BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83 N:4335536.00 E:521793.00 NAD27, WV NORTH N:246006.438 E:1646194.212 LAT/LON DATUM-NAD27 LAT:39.168686 LON:-80.747899	UTM 17-NAD83 N:4335691.67 E:521579.16 NAD27, WV NORTH N:246529.000 E:1645501.000 LAT/LON DATUM-NAD27 LAT:39.170094 LON:-80.750369	UTM 17-NAD83 N:4339040.88 E:520296.73 NAD27, WV NORTH N:257590.000 E:1641476.000 LAT/LON DATUM-NAD27 LAT:39.200306 LON:-80.765114
<b>AS DRILLED</b> SURFACE HOLE LOCATION (SHL) UTM 17-NAD83 N:4335536.15 E:521793.06 NAD27, WV NORTH N:246006.906 E:1646194.409 LAT/LON DATUM-NAD27 LAT:39.168687 LON:-80.747899	<b>AS DRILLED</b> APPROX. POINT OF ENTRY (POE) UTM 17-NAD83 N:4335667.42 E:521586.82 NAD27, WV NORTH N:246448.991 E:1645524.821 LAT/LON DATUM-NAD27 LAT:39.169875 LON:-80.750281	<b>AS DRILLED</b> BOTTOM HOLE LOCATION (BHL) UTM 17-NAD83 N:4337098.71 E:521031.46 NAD27, WV NORTH N:251176.360 E:1643780.740 LAT/LON DATUM-NAD27 LAT:39.182786 LON:-80.756667

FEBRUARY 05, 2018