



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

August 19, 2014

WELL WORK PERMIT

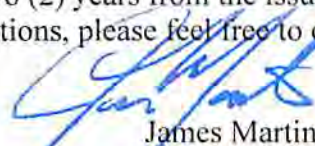
Horizontal 6A Well

This permit, API Well Number: 47-1706542, issued to ANTERO RESOURCES CORPORATION, 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 all 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: NEW MILTON UNIT 2H
Farm Name: SWISHER, LEOAN
API Well Number: 47-1706542
Permit Type: Horizontal 6A Well
Date Issued: 08/19/2014

Promoting a healthy environment.

09/05/2014

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

1706542

6/12

WW-6B
(9/13)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Antero Resources Corporation 494488557 017-Doddridge New Milton New Milton
Operator ID County District Quadrangle

2) Operator's Well Number: New Milton Unit 2H Well Pad Name: Swisher Pad (existing)

3) Farm Name/Surface Owner: Leolan Swisher Public Road Access: CR 25

4) Elevation, current ground: 976' Elevation, proposed post-construction: 976'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

*DCW
6-18-2014*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Marcellus Shale: 7200' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3250#

8) Proposed Total Vertical Depth: 7200' TVD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 18,500' MD

11) Proposed Horizontal Leg Length: 10,754'

12) Approximate Fresh Water Strata Depths: 110'

13) Method to Determine Fresh Water Depths: Josie Unit 2H (API# 47-017-06265) on same pad

14) Approximate Saltwater Depths: 1270', 1460'

15) Approximate Coal Seam Depths: 350', 1480'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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WW-6B
(9/13)

18)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/ 48#	300'	300'	CTS, 417 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2460'	2460'	CTS, 1002 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	18500'	18500'	4692 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

*DCW
6-19-2014*

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	Class A	1.18
Intermediate						
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200		
Liners						

PACKERS

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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(9/13)

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 9.53 acres

22) Area to be disturbed for well pad only, less access road (acres): 3.39 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers
Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.
Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.
Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb flake
Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat
Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51
Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.
Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.
Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

WW-9
(9/13)

API Number 47 - 017 - _____
Operator's Well No. New Milton Unit 2H

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 494488557

Watershed (HUC 10) Meathouse Fork Quadrangle New Milton

Elevation 976' County Doddridge District New Milton

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 _____)
- 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 _____)

*DCW
6-18-2014*

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - , Out/Sluff Foam, Production - Water Based Mud

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

Additives to be used in drilling medium? Please See Attachment

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Stored in tanks, removed offsite and taken to landfill.

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

-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-98)

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 *Cole Kilstrom*
Company Official (Typed Name) Cole Kilstrom
Company Official Title Environmental Specialist

Subscribed and sworn before me this 6 day of June, 2014
Kaitlin Buck Notary Public
My commission expires 4/3/2018



09/05/2014

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 9.53 Prevegetation pH _____

Lime 2-3 Tons/acre or to correct to pH 6.5

Fertilizer type Hay or straw or Wood Fiber (will be used where needed)

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road to Pads and Tank Farm (2.33) + Drill Pad (3.39) + Tank Farm and Spoil Pad (3.81) = 9.53 Acres

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	45	Tall Fescue	45
Perennial Rye Grass	20	Perennial Rye Grass	20
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Douglas Newton

Comments: Maintain EIS + seed + mulch any disturbed areas

Title: Oil & Gas Inspector Date: 6-18-2014

Field Reviewed? () Yes () No

Form WW-9 Additives Attachment**SURFACE INTERVAL**

1. Fresh Water
2. Soap –Foamer AC
3. Air

INTERMEDIATE INTERVAL***STIFF FOAM RECIPE:***

- 1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
- 2) 1 ppb Conqor 404 (11.76 ppg) / Corrosion Inhibitor
- 3) 4 ppb KLA-Gard (9.17 ppg) / Amine Acid Complex-Shale Stabilizer
- 4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
- 5) 12 ppb KCL / Potassium Chloride-inorganic Salt
- 6) Fresh Water 80 bbls
- 7) Air

PRODUCTION INTERVAL

1. Alpha 1655
Salt Inhibitor
2. Mil-Carb
Calcium Carbonate
3. Cottonseed Hulls
Cellulose-Cottonseed Pellets – LCM
4. Mil-Seal
Vegetable, Cotton & Cellulose-Based Fiber Blend – LCM
5. Clay-Trol
Amine Acid Complex – Shale Stabilizer
6. Xan-Plex
Viscosifier For Water Based Muds
7. Mil-Pac (All Grades)
Sodium Carboxymethylcellulose – Filtration Control Agent
8. New Drill
Anionic Polyacrylamide Copolymer Emulsion – Shale Stabilizer
9. Caustic Soda
Sodium Hydroxide – Alkalinity Control
10. Mil-Lime
Calcium Hydroxide – Lime
11. LD-9
Polyether Polyol – Drilling Fluid Defoamer
12. Mil Mica
Hydro-Biotite Mica – LCM

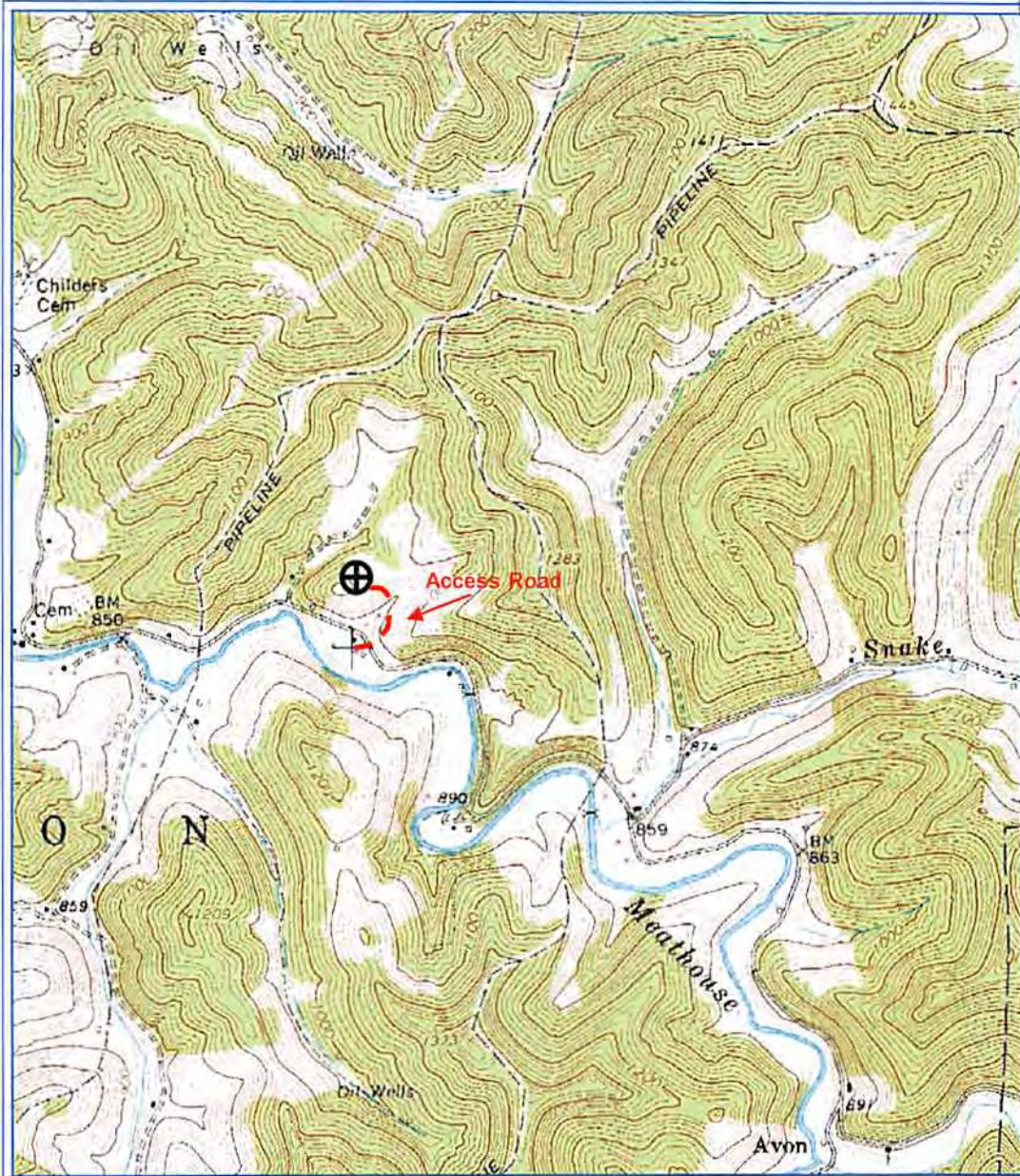
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13. Escaid 110
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K
Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous
Inorganic Salt
18. D-D
Drilling Detergent – Surfactant
19. Terra-Rate
Organic Surfactant Blend
20. W.O. Defoam
Alcohol-Based Defoamer
21. Perma-Lose HT
Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D
Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells
Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite
Natural Graphite – LCM
25. Mil Bar
Barite – Weighting Agent
26. X-Cide 102
Biocide
27. Soda Ash
Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol
Amine Acid complex – Shale Stabilizer
29. Sulfatrol
Sulfonated Asphalt – Shale Control Additive
30. Xanvis
Viscosifier For Water-Based Muds
31. Milstarch
Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube
Drilling Fluid Lubricant

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47-1700542

Plant spotted
✓



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Antero Resources

Appalachian Basin

New Milton Unit 2H

Doddridge County

Ratio Scale = 1 : 24,000



REMARKS

Quadrangle: New Milton
Watershed: Meathouse Fork
District: New Milton

By: TRO

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09/05/2014

ANT 2868

11,866' to Top Hole

3,413' to Bottom Hole

LATITUDE 39 - 15 - 00

BOTTOM HOLE LONGITUDE 80 - 40 - 00
TOP HOLE LONGITUDE 80 - 37 - 30

Antero Resources Well No. New Milton Unit 2H Antero Resources Corporation

(+) Denotes Location of Well on United States Topographical Maps

Note: It appears 6 water wells and 2 springs were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

Well Location References

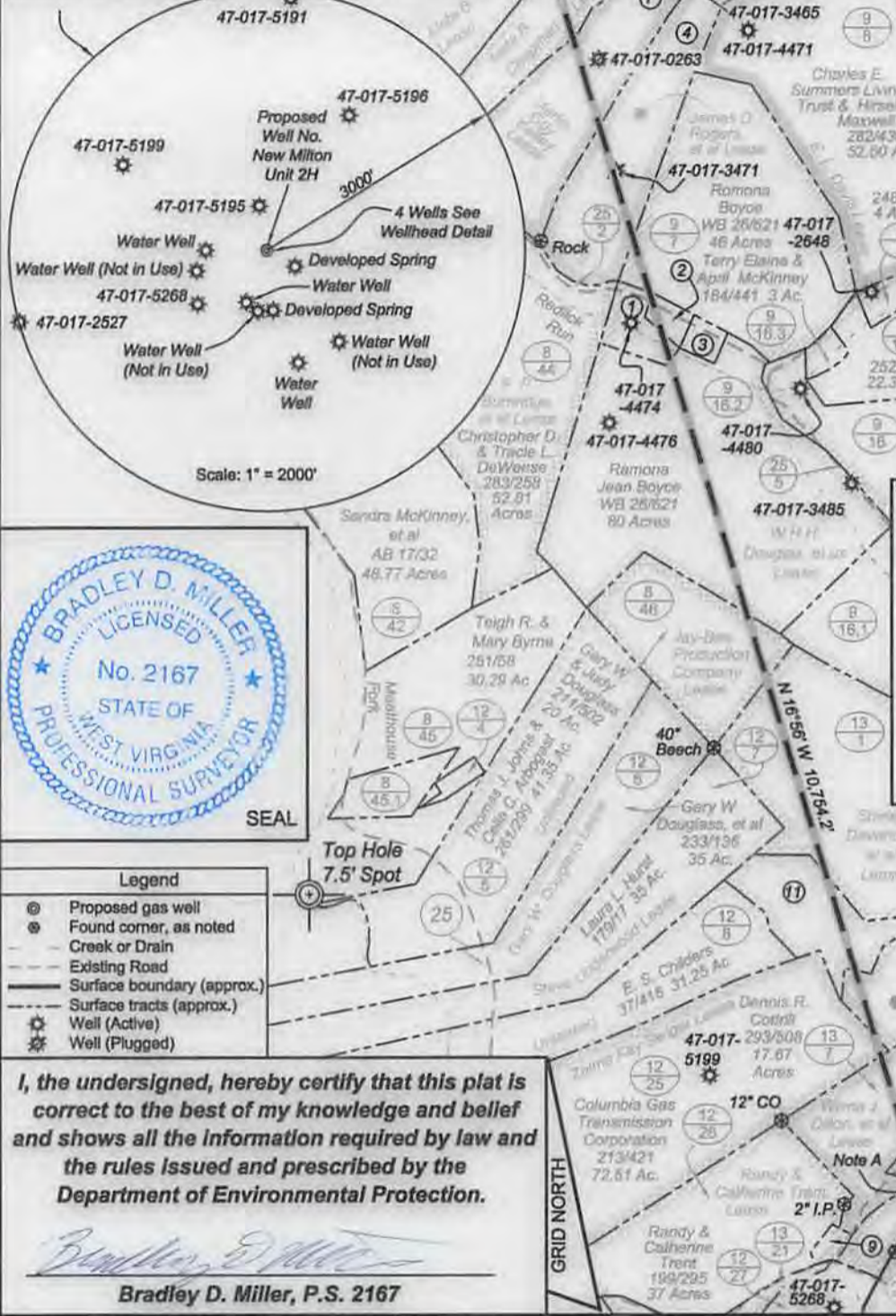


Line	Bearing	Dist.
L1	S 15°22' W	1021.7'
L2	S 11°42' E	516.7'
L3	N 49°51' W	279.8'
L4	N 58°55' E	463.9'

Note "A" Tangent Point
N: 281,072.64'
E: 1,669,327.76'

Par.	TM 8 Surface Owner	Bk/Pg	Acres
1	49 Terry Gale Boyce	200/30	4.00
2	47 Euna Gay Engstrom	WB 38/36	3.00
3	48 Ramona Boyce	WB 26/621	2.00
4	34 Robert L. & Norma Jean Martin	147/193	25.00
5	32 Roger A. McClain II & Stacy L. McClain	288/303	15.18
6	10 Roger A. McClain II & Stacy L. McClain	288/303	28.58
7	33 Marlin G. Kelly, et al	294/665	36.75
TM 13 Surface Owner			
8	8 Darrell W. & Barbara Devericks	229/260	17.84
9	35 Christopher R. Kelley & Brandi M. Trent	242/688	1.03
10	9 Leon Swisher	WB 33/535	56.99
11	2 Dennis R. Cottrill	293/508	40.25

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No: New Milton Unit 2H Top Hole coordinates are
N: 260,892.20' Longitude: 39°12'37.49"
E: 1,669,541.65' Longitude: 80°39'58.47"
Bottom Hole coordinates are
N: 271,360.57' Longitude: 39°14'20.52"
E: 1,666,195.51' Longitude: 80°40'42.73"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,340,189.632m N: 4,343,361.792m
E: 528,830.173m E: 527,757.562m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

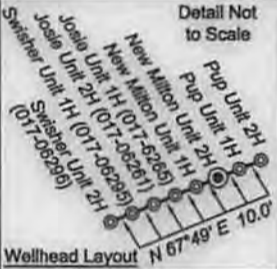


Legend

- ⊙ Proposed gas well
- ⊙ Found corner, as noted
- - - Creek or Drain
- - - Existing Road
- - - Surface boundary (approx.)
- - - Surface tracts (approx.)
- ⊙ Well (Active)
- ⊙ Well (Plugged)

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 prescribed by the Department of Environmental Protection.

Bradley D. Miller
Bradley D. Miller, P.S. 2167



FILE NO: 138-30-NM-13
DRAWING NO: 138-13 New Milton 2H Well
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: June 4 2014
Operator's Well No. New Milton Unit 2H
API WELL NO
47 - 017 - 06542 H6A
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: 976' WATERSHED: Meathouse Fork QUADRANGLE: New Milton
DISTRICT: New Milton COUNTY: Doddridge
SURFACE OWNER: Leoan Swisher MARLIN GUY KELLEY; ROGER A. MCCLAIN; MARY MAXINE WELCH, et al
ROYALTY OWNER: Ida J. Warner, et al; Aleta B. Chapman (2); James D. Rogers, et al; Zelma Kay Swiger LEASE NO: 20215 ACREAGE: 60; 31; 15.5; 60.75
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,200' TVD
18,500' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

14,268' to Top Hole

API#1706261
API#1706265

SWISHER DRILL PAD SITE FINAL SITE DESIGN, CONSTRUCTION PLAN, AND EROSION & SEDIMENT CONTROL PLANS ANTERO RESOURCES APPALACHIAN CORPORATION

**APPROVED
WVDEP OOG**

5/29/2013



DATE	REV	BY
5/20/13	1	JD

T&E Brothers Consulting, Inc.
CONSULTING AND DESIGN SERVICES
CHARLESTON, WV 25301
TEL: 304.746.4444
WWW.T&EBROTHERS.COM



● PROJECT LOCATION



WASHED (PLATE 11) & MILTON (PLATE 12) AND NEW MILTON 7.5 QUAD
● PROJECT LOCATION
SCALE 1" = 2000'

WELL HEAD ELEVATION TABLE

WELL NAME	WELL HEAD ELEVATION (FEET)			
	EAST	NORTH	ELEVATION	DATE
SWISHER 1	20824.00	5520.00	2512.00	05/29/13
SWISHER 2	20824.00	5520.00	2512.00	05/29/13
SWISHER 3	20824.00	5520.00	2512.00	05/29/13
SWISHER 4	20824.00	5520.00	2512.00	05/29/13
SWISHER 5	20824.00	5520.00	2512.00	05/29/13
SWISHER 6	20824.00	5520.00	2512.00	05/29/13
SWISHER 7	20824.00	5520.00	2512.00	05/29/13
SWISHER 8	20824.00	5520.00	2512.00	05/29/13
SWISHER 9	20824.00	5520.00	2512.00	05/29/13
SWISHER 10	20824.00	5520.00	2512.00	05/29/13

WELL LOCATION RESTRICTIONS

THE PAD COMPLIES WITH THE FOLLOWING RESTRICTIONS:
 100 FEET FROM ANY EXISTING WELL OR DEVELOPED SPRING HEAD OR HOLE OR OTHER SOURCE OF WATER.
 100 FEET FROM ANY EXISTING OR DEVELOPED SPRING HEAD OR HOLE OR OTHER SOURCE OF WATER.
 100 FEET FROM ANY EXISTING OR DEVELOPED SPRING HEAD OR HOLE OR OTHER SOURCE OF WATER.
 100 FEET FROM ANY EXISTING OR DEVELOPED SPRING HEAD OR HOLE OR OTHER SOURCE OF WATER.
 100 FEET FROM ANY EXISTING OR DEVELOPED SPRING HEAD OR HOLE OR OTHER SOURCE OF WATER.

PROJECT CONTACTS:
 ANTHONY W. BUNCH, CIVIL ENGINEER
 204493.0405 OFFICE
 304.873.8300 CELL
 ERIK W. GARDNER, ENVIRONMENTAL ENGINEER
 204422.1810 FAX #1
 304.873.8300 CELL
 JOHN W. GARDNER, ENGINEER
 213.388.4833
 KATHY HUNTER, CONSTRUCTION SUPERVISOR
 88.912.8888
 CURTIS FORBES, ENGINEER
 WHITE BROTHERS CONSULTING, LLC
 1400 SWISHER RD
 204422.1810
 1400 SWISHER RD
 204422.1810

WELL LOCATIONS

WELL NAME	EAST	NORTH	ELEVATION
CENTER OF PAD	20824.00	5520.00	2512.00
ROAD ACCESS ROAD	20824.00	5520.00	2512.00
CENTER OF PAD (EAST 1/2)	20824.00	5520.00	2512.00
CENTER OF TANK	20824.00	5520.00	2512.00

LOG AREAS (ACRES)

DESCRIPTION	AREA
ROAD ACCESS ROAD TO PAD AND TANK FARM	2.24
DRAINAGE	1.33
TANK FARM AND SIDE PAD	3.81
TOTAL	7.44
TOTAL WOODED AREA	2.89

LENGTHS (FEET)

DESCRIPTION	LENGTH
COUNTY ROUTE TO DRILL PAD	425
MARKING TO SWISHER PAD	1,522
DRILL PAD TO TANK FARM	257
TOTAL	2,204

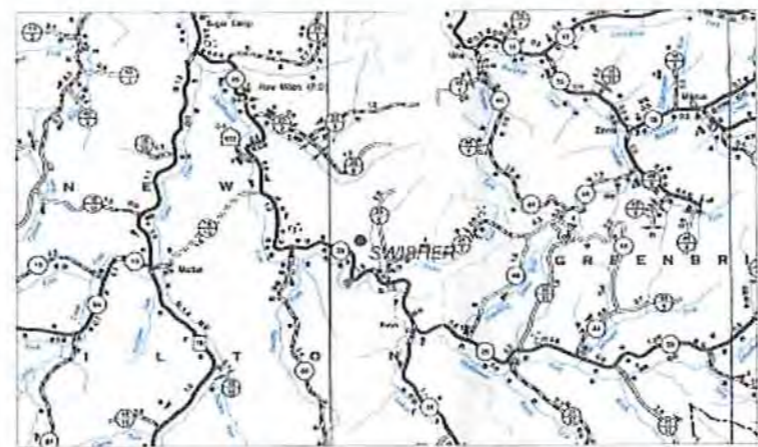
STREAM IMPACTS (LINEAR FEET)

DESCRIPTION	LINEAR FEET
STREAM 1 - 100' BUFFER	112
STREAM 2 - 100' BUFFER	62
TOTAL	172

FLOODPLAIN CONDITIONS

DO THE PROPOSED ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT IN FLOOD PLAIN COUNTY FLOODPLAIN COORDINATOR	NO
HIC HAS STUDY CONDUCTED	NO
FLOODPLAIN THRESHOLD DRAINAGE	NO
EROSION ALLOWABLE FOR SITE	NO
PHASES OF CONSTRUCTION RESTRICTIONS	NO

Electronic Version of Plans Can Be Viewed at: Q:\OIL GAS\SAY FILES\REVIEWS



SHEET INDEX

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DATE OF CERTIFICATION: 5/29/2013
 THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DRAWINGS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE REGULATIONS, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS (20-2-1)

MAJOR PERMITS:
 ANTHONY W. BUNCH WILL OBTAIN AN ENCROACHMENT PERMIT (NECESSARY FOR THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS) PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

FINAL SITE DESIGN, QUANTITIES AND CONSTRUCTION SEQUENCE
SWISHER DRILL PAD SITE
 NEW MILTON DISTRICT
 DODDRIDGE COUNTY, WV

MISS UTILITY OF WEST VIRGINIA
 1-800-245-6848
 WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL TWO BUSINESS DAYS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW!



DATE: 5/29/2013
 TIME: 10:00 AM
 DRAWN BY: JDB
 CHECKED BY: JDB