



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

PERMIT MODIFICATION APPROVAL

January 13, 2016

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for API Number 1706668, Well #: DUCKBILL UNIT 2H


Surface Hole, Pad Extension, WMP, Lateral

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,


for Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

Promoting a healthy environment.

01/15/2016

API# 47-017-06668 SHL & PAD DESIGN MODIFICATION

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 Central West Union 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Duckbill Unit 2H Well Pad Name: Existing Vogt Pad

3) Farm Name/Surface Owner: Vogt, Gregory L. & Carolyn S. Public Road Access: CR 36

4) Elevation, current ground: 1112' Elevation, proposed post-construction: 1112'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6,800' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3100#

8) Proposed Total Vertical Depth: 6,800' TVD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 18900' MD

11) Proposed Horizontal Leg Length: 10997'

12) Approximate Fresh Water Strata Depths: 155'

13) Method to Determine Fresh Water Depths: Seaborn Unit 1H (API #47-017-06169) on same pad.

14) Approximate Saltwater Depths: 1581', 1872'

15) Approximate Coal Seam Depths: None Reported

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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Environmental Protection

API# 47-017-06668 SHL & PAD DESIGN MODIFICATION

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
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#	2425'	2425'	CTS, 987 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	18900'	18900'	4812 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12,630	2500	Lead-HIPOZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

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API# 47-017-06668 SHL & PAD DESIGN MODIFICATION

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."

Anticipated Max Pressure - 9300 lbs
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 11.43 acres

22) Area to be disturbed for well pad only, less access road (acres): 4.38 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

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 - 06668 MOD

Operator's Well No. Duckbill 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) Tributary of Wilhelm Run Quadrangle West Union 7.5'

Elevation 1112' County Doddridge District Central

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: Drilling and Flowback Fluids and Cuttings

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 60 mil (existing)

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 _____)

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 - Dust/Stiff 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)

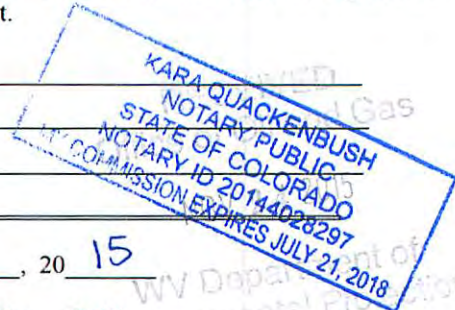
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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 [Signature]

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental Representative



Subscribed and sworn before me this 23 day of November, 2015

[Signature] Notary Public

My commission expires July 21, 2018

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

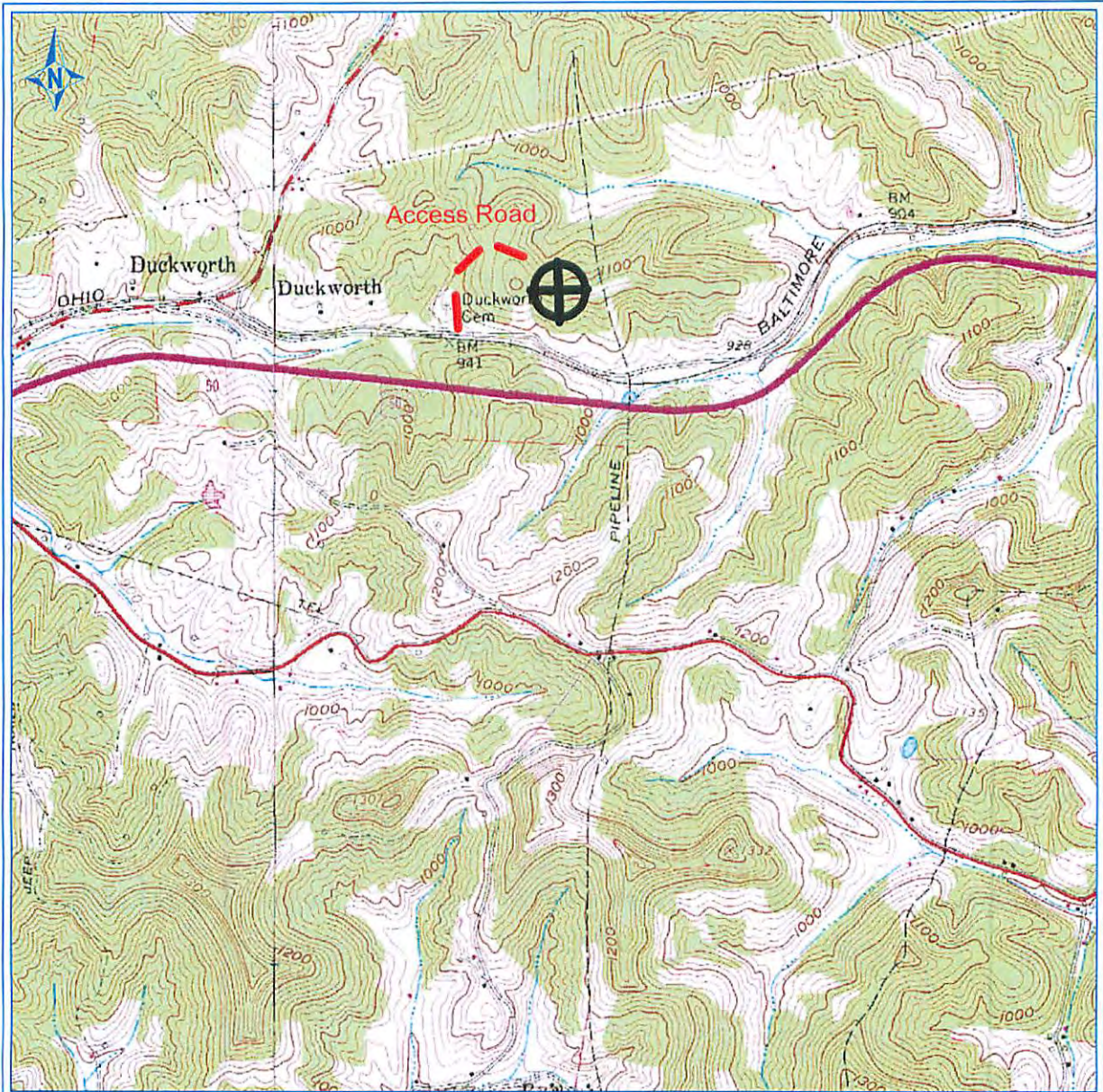
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17-06668 MOD

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

01/15/2016

17-06668 Mon



PETRA 10/19/2012 9:32:31 AM

ANTERO RESOURCES CORPORATION

APPALACHIAN BASIN

Vogt Pad

Duckbill Unit 2H
Doddridge County



REMARKS
QUADRANGLE: WEST UNION
WATERSHED: TRIB. OF WILHELM RUN
DISTRICT: CENTRAL

October 19, 2012

01/15/2016

LATITUDE 39°17'30"

8,234'

5,238'

10,002' TO BOTTOM HOLE

LONGITUDE 80°52'30"

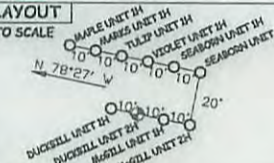
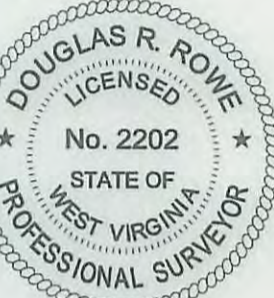
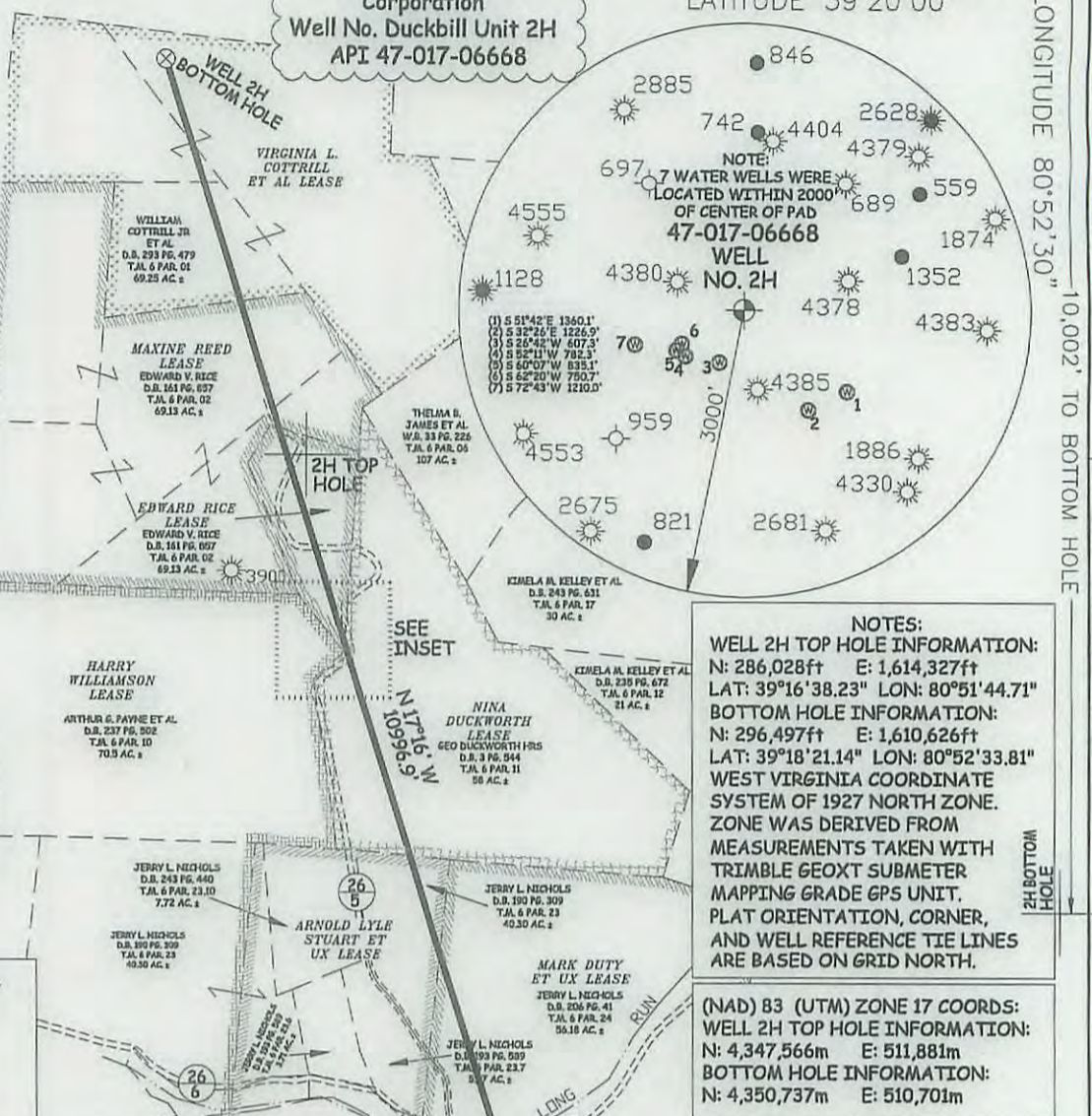
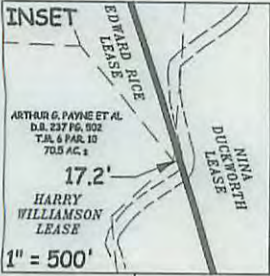
WOLLOUGH

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Duckbill Unit 2H
API 47-017-06668

300' TO BOTTOM HOLE
LATITUDE 39°20'00"

NOTE:
NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DIRT OR POULTRY OR LIVESTOCK ARE LOCATED WITHIN ONE HUNDRED TWENTY-FIVE (125) FEET OF THE CENTER OF THE WELL PAD.



API WELL # 47 - 017 - 06668 HGA
STATE COUNTY PERMIT MOV

JOB # 14-088WA
DRAWING # DUCKBILL2HR4
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND
--- Surface Owner Boundary Lines +/-
--- Interior Surface Tracts +/-
--- Existing Fence
--- Iron Rod, Found

DOUGLAS R. ROWE P.S. 2202

DATE 11/16/15

OPERATOR'S WELL# DUCKBILL UNIT #2H

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

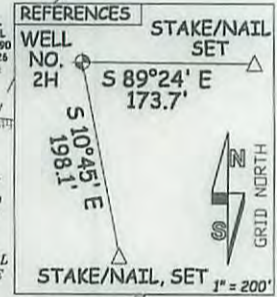
STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1118' ORIGINAL - 1,112' AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE WEST UNION 7.5' (TH) PENNSBORO 7.5' (BH) DISTRICT CENTRAL COUNTY DODDRIDGE
SURFACE OWNER GREGORY R. & CAROLYN S. VOGT ACREAGE 12.07 ACRES +/-
OIL & GAS ROYALTY OWNER PATRICK A. WRIGHT; FLOYD MCGILL, JR. ET AL; FRANK MCGILL ET AL; LEASE ACREAGE 222 AC±; 107 AC±; 106 AC±;
JAMES C. RIDDLE ET AL; ANNIE AGNUS HURST; MARK DUTY ET UX; ARNOLD LYLE STUART ET UX; NINA DUCKWORTH; EDWARD RICE; MAXINE REED; VIRGINIA L. COTTRILLER ET AL 75 AC±; 25 AC±; 71 AC±; 38 AC±; 58.75 AC±; 9.25 AC±; 69.13 AC±; 70 AC±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD - BHL
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,800' TVD 18,900' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 CHARLESTON, WV 25313

FORM WW-6

NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 286,028ft E: 1,614,327ft
LAT: 39°16'38.23" LON: 80°51'44.71"
BOTTOM HOLE INFORMATION:
N: 296,497ft E: 1,610,626ft
LAT: 39°18'21.14" LON: 80°52'33.81"
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) B3 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 4,347,566m E: 511,881m
BOTTOM HOLE INFORMATION:
N: 4,350,737m E: 510,701m



01/15/2016

LATITUDE 39°17'30"

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300' TO BOTTOM HOLE
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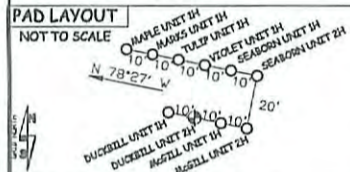
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Antero Resources Corporation
Well No. Duckbill Unit 2H
API 47-017-06668

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WV NORTH ZONE GRID NORTH



API WELL # 47 - 017 - 06668
STATE COUNTY PERMIT

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WILLOW LAND SURVEYING PLLC
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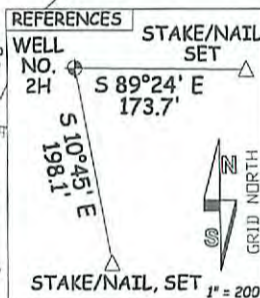
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ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

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N: 4,350,737m E: 510,701m



- (A) LINDA D. BURG JETT ET AL D.B. 301 PG. 100 T.M. 9 PAR. 18.4 7.023 AC±
- (B) ROGER L. ELDER ET AL D.B. 236 PG. 923 T.M. 9 PAR. 18.3 10.107 AC±
- (C) WILLIAM T. KUNIK ET AL D.B. 204 PG. 645 T.M. 9 PAR. 18.7 1 ACRE±
- (D) WMT KUNIK ET AL D.B. 190 PG. 658 T.M. 9 PAR. 18.2 2 ACRES±
- (E) RICHARD KELLEY ET UX D.B. 175 PG. 292 T.M. 6 PAR. 32.1 1.15 AC±
- (F) BERNARD KELLEY ET AL D.B. 277 PG. 3 T.M. 6 PAR. 32.3 1.01 AC±
- (G) RONALD RICHARDS ET AL D.B. 250 PG. 73 T.M. 6 PAR. 32.4 1.33 AC±

COUNTY NAME PERMIT

RECEIVED
Office of Oil and Gas
2015

04/15/2016

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Arnold Lyle Stuart, et ux Lease</u> Arnold Lyle Stuart, et ux	Antero Resources Corporation	1/8+	0356/0378
<u>Nina Duckworth Lease</u> Nina Duckworth	Antero Resources Corporation	1/8+	0323/0604
<u>Harry Williamson Lease</u> Harry Williamson J & J Enterprises, Inc. Eastern American Energy Corporation Enervest East Limited Partnership The Houston Exploration Company Seneca-Upshur Petroleum, Inc.	J & J Enterprises, Inc. Eastern American Energy Corporation Enervest East Limited Partnership The Houston Exploration Company Seneca-Upshur Petroleum, Inc. Antero Resources Appalachian Corporation	1/8 Merger Assignment Assignment Assignment Memorandum of Agreement	0136/0270 DB 0211/0437 0193/0509 0196/0228 0199/0024 0287/0321
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Edward Rice Lease</u> Edward Rice Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0289/0356 Exhibit 1
<u>Maxine Reed Lease</u> Maxine Reed Eastern American Energy Corporation Antero Resources Appalachian Corporation	Eastern American Energy Corporation Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Assignment Name Change	0158/0674 0272/0328 Exhibit 1

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Office of Oil and Gas
NOV 24 2015
WV Department of
Environmental Protection

*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Patrick A. Wright Lease</u>			
Patrick A. Wright	Key Oil Company	1/8	0179/0260
Key Oil Company	Antero Resources Appalachian Corp.	*Partial Assignment of Oil and Gas Leases	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Floyd McGill, Jr., et al Lease</u>			
Floyd McGill, Jr., et ux	Key Oil Company	1/8	0181/0563
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Frank McGill, et al Lease</u>			
Frank McGill, et al	Petroleum Services, Inc.	1/8	0115/0563
Petroleum Services, Inc.	Magnum Oil Corporation	Assignment	0118/0555
Magnum Oil Corporation	Eneger Corporation	Assignment	0146/0664
Eneger Corporation	Basin Project, Inc.	Assignment	0153/0281
Basin Project, Inc.	James A. Eliopulos	Assignment	0252/0382
James A. Eliopulos d/b/a Alexander Production Company, Inc.	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0267/0506
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>James C. Riddle, et al Lease</u>			
James C. Riddle	Lawrence Jacob	1/8	0060/0246
Lawrence Jacob	W. Leslie Rogers	Assignment	0061/0400
W. Leslie Rogers	W. Kevin Snider & Ritchie Petroleum Corporation	Assignment	0178/0499
W. Kevin Snider & Ritchie Petroleum Corporation	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	02749/0546
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Annie Agnes Hurst Lease</u>			
Annie Agnes Hurst	Devonian Appalachian Co.	1/8	0157/0620
Devonian Appalachian Co.	New Freedom Energy, LLC	Assignment	0200/0563
New Freedom Energy, LLC	Antero Resources Corporation	Assignment	0336/0127
<u>Mark Duty, et ux Lease</u>			
Mark Duty, et ux	Key Oil Company	1/8	0185/0200
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0276/0526
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Virginia L. Cottrill, et al Lease</u>	Virginia L. Cottrill, et vir	J & J Enterprises, Inc.	1/8	0141/0216
	J & J Enterprises, Inc.	Eastern American Energy Corporation	Confirmatory Deed	0159/0139
	Eastern American Energy Corporation	Energy Corporation of America	*Partial Assignment of Oil & Gas Leases	0240/0498
	Eastern Corporation of America	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0272/0307
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

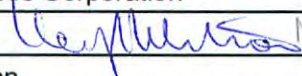
*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Antero Resources Corporation
 By: Kevin Kilstrom  NOV 24 2015
 Its: VP of Production

Office of Oil and Gas

WV Department of Environmental Protection

FORM WW-6A1
EXHIBIT 1

17-06668 mob

FILED

JUN 10 2013

Natalie E. Tennant
Secretary of State
1900 Kanawha Blvd E
Bldg 1, Suite 157-K
Charleston, WV 25305



Penney Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvgsos.com
E-mail: business@wvgsos.com

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

Office Hours: Monday – Friday
8:30 a.m. – 5:00 p.m. ET

FILE ONE ORIGINAL
(Two if you want a filed
stamped copy returned to you)
FEE: \$25.00

**** In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby ****
applies for an Amended Certificate of Authority and submits the following statement:

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/26/2008
- Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)
- Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- Other amendments: (attach additional pages if necessary)
- Name and phone number of contact person. (This is optional, however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)
Alvyn A. Schopp (303) 367-7310
Contact Name Phone Number
- Signature information (See below **Important Legal Notice Regarding Signature**):
Print Name of Signer: Alvyn A. Schopp Title/Capacity: Authorized Person
Signature: [Handwritten Signature] Date: June 10, 2013

**Important Legal Notice Regarding Signature:* Per West Virginia Code §31D-1-129, Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

Form CF-4

Issued by the Office of the Secretary of State

WV013 - 04/16/2013 Website: [klaxson.com](http://www.klaxson.com)

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Office of Oil and Gas
NOV 24 2015
Revised 4/13
WV Department of
Environmental Protection

01/15/2016

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 11/23/2015 Date Permit Application Filed: 11/23/2015

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: PLEASE SEE ATTACHMENT
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: PLEASE SEE ATTACHMENT
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE

Name: PLEASE SEE ATTACHMENT
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

Oil and Gas
 NOV 24 2015
 WV Department of
 Environmental Protection

01/15/2016

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Office of Oil and Gas
NOV 24 2015
Approved by the Secretary of the Department of Environmental Protection

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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NOV 24 2015
WV Department of
Environmental Protection

01/15/2016

WW-6A
(8-13)

API# 47-017-06668 SHL & PAD DESIGN MODIFICATION

API NO. 47-017 - 06668
OPERATOR WELL NO. Duckbill Unit 2H
Well Pad Name: Existing Vogt Pad

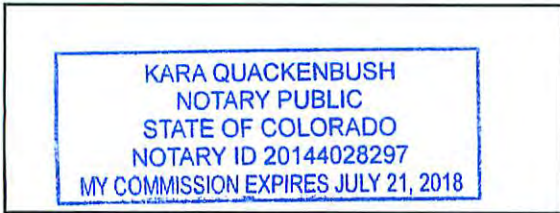
Notice is hereby given by:

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: asteele@anteroresources.com

Address: 1615 Wynkoop Street
Denver, CO 80202
Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



Subscribed and sworn before me this 23 day of November 2015
Kara Quackenbush Notary Public
My Commission Expires July 21, 2018

RECEIVED
Office of Oil and Gas
NOV 24 2015
WV Department of
Environmental Protection

01/15/2016

WW-6A Notice of Application Attachment (VOGT PAD):**List of Surface Owner(s) with Proposed Disturbance associated with Vogt Well Pad:**

WELL PAD – This owner was notified of all well work permit applications, and has executed signed Surface Use Agreements with Antero Resources Corporation.

TM 9 PCL 18

Owner: Gregory R. & Carolyn S. Vogt
Address: 29 Lois Lane
 Greenwood, WV 26415

TM 9 PCL 18.3

Owner: Steven W. & Vicky L. Kelley
Address: 328 Kelley Mountain Road
 Greenwood, WV 26415

ROAD AND/OR OTHER DISTURBANCE – These owners has executed a signed Agreement with Antero Resources Corporation. However, they were only notified if their tract is overlying the oil and gas leasehold being developed by the proposed well work as outlined in WV Code 22-6A-10(b)(2).

TM 9 PCL 16

Owner: Jerry & Michael Norman
Address: 1798 Duckworth Rd.
 Greenwood, WV 26415

Owner: Jerry & Michael Norman
 (2nd Address)
Address: 1750 Duckworth Rd.
 Greenwood, WV 26415

TM 6 PCL 41

Owner: Annabell J. Riffle & Troy D.
 Cunningham
Address: 1538 Duckworth Rd.
 Greenwood, WV 26415

RECEIVED
 Environmental Cas

NOV 24 2015

WV Department of
 Environmental Protection

01/15/2016

WW-6A Notice of Application Attachment (VOGT PAD):**List of Water Source Owners - Vogt Well Pad:****WATER SOURCE OWNERS:**

Owner: Kevin J. & Doreen G. Harney
(1 source: 1360')

Address: One Bank Plaza
Wheeling, WV 26003

Owner: Gregory R. & Carolyn S. Vogt
(2 sources: 1227', 751')

Address: 29 Lois Lane
Greenwood, WV 26415

Owner: Roger L. & Susan K. Elder
(1 source: 607')

Address: PO Box 569752
Dallas, TX 75356

Owner: WMT & Sharon S. Kunik
(2 sources: 782', 835')

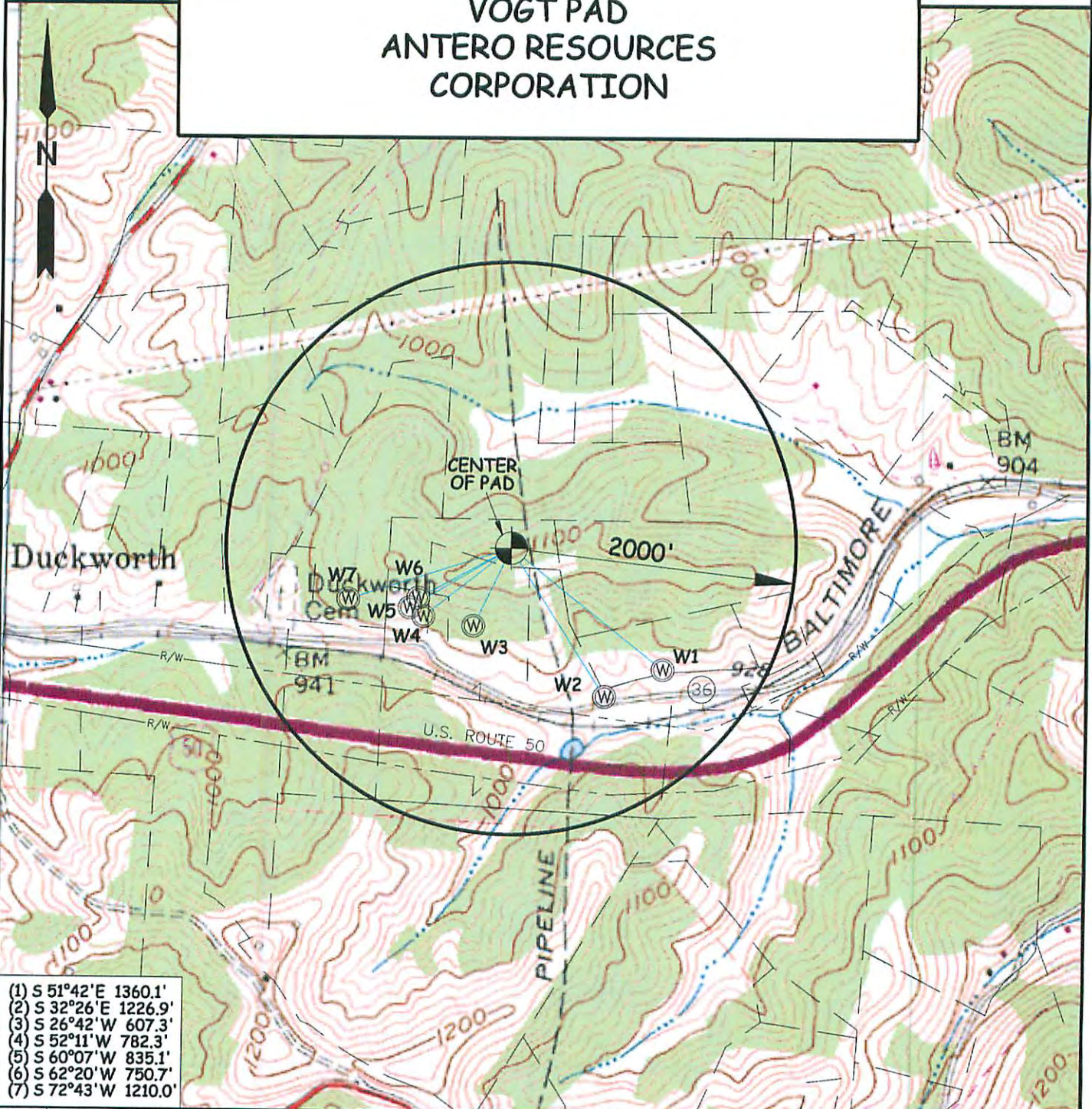
Address: 1412 Duckworth Rd.
Pensboro, WV 26415

Owner: Annabell J. Riffle
(1 source: 1210')

Address: 1538 Duckworth Rd.
Greenwood, WV 26415

RECEIVED
DEPARTMENT OF ENVIRONMENT AND GAS
OFFICE OF REGULATORY AFFAIRS
NOV 24 2015
NOV 24 2015
WV DEPARTMENT OF ENVIRONMENT AND GAS
Environmental Health Division
01/15/2016

VOGT PAD ANTERO RESOURCES CORPORATION



- (1) S 51°42' E 1360.1'
- (2) S 32°26' E 1226.9'
- (3) S 26°42' W 607.3'
- (4) S 52°11' W 782.3'
- (5) S 60°07' W 835.1'
- (6) S 62°20' W 750.7'
- (7) S 72°43' W 1210.0'

WELL	SURFACE OWNER	ADDRESS	DISTRICT-TAX MAP-PARCEL	WELL LATITUDE	WELL LONGITUDE
W1	Kevin J. & Doreen G. Harney	One Bank Plaza Wheeling, WV 26003	1-9-18.9	LAT:39°16'30.27"	LON:80°51'31.06"
W2	Gregory R. & Carolyn S. Vogt	29 Lois Lane Greenwood, WV 26415	1-9-18.13	LAT:39°16'28.31"	LON:80°51'36.23"
W3	Roger L. & Susan K. Elder	P.O. Box 569752 Dallas, TX 75356	1-9-18.3	LAT:39°16'33.04"	LON:80°51'48.16"
W4	WMT & Sharon C. Kunik	1412 Duckworth Rd. Greenwood, WV 26415	1-9-18.2	LAT:39°16'33.59"	LON:80°51'52.43"
W5	WMT & Sharon C. Kunik	1412 Duckworth Rd. Greenwood, WV 26415	1-9-18.2	LAT:39°16'34.21"	LON:80°51'53.93"
W6	Gregory R. & Carolyn S. Vogt	29 Lois Lane Greenwood, WV 26415	1-9-18	LAT:39°16'34.90"	LON:80°51'53.18"
W7	Annabell J. Riffle	1538 Duckworth Rd. Greenwood, WV 26415	1-6-41	LAT:39°16'34.72"	LON:80°51'59.41"

WILLOW LAND SURVEYING, PLLC
P.O. BOX 17, PENNSBORO, WV 26415
(304) 659-1717

TOPO SECTION(S) OF ;
WEST UNION 7.5' QUAD.

JOB #: 12-102WA

FILE: VOGTWATERMAPR

SCALE : 1-INCH = 1000-FEET



DATE: 11/16/15

DRAWN BY: D.R.R.

01/15/2016

WV Dept. of Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 11/23/2015 **Date Permit Application Filed:** 11/23/2015

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

- | | |
|--|-------------------------------|
| <input checked="" type="checkbox"/> CERTIFIED MAIL | <input type="checkbox"/> HAND |
| RETURN RECEIPT REQUESTED | DELIVERY |

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Gregory R. & Carolyn S. Vogt
Address: 29 Lois Lane
Greenwood, WV 26415

Name: Steven W. & Vicky L. Kelley
Address: 328 Kelley Mountain Road
Greenwood, WV 26415

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>511881m</u>
County: <u>Doddridge</u>	Northing: <u>4347566m</u>
District: <u>Central</u>	Public Road Access: <u>CR 36</u>
Quadrangle: <u>West Union 7.5'</u>	Generally used farm name: <u>Vogt, Gregory R. & Carolyn S.</u>
Watershed: <u>Tributary of Wilhelm Run</u>	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: asteele@anteroresources.com

Address: 1615 Wynkoop Street
Denver, CO 80202
Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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.

Office of Oil and Gas
NOV 24 2015
WV Department of
Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, _____, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>511881m</u>
County:	<u>Doddridge</u>		Northing:	<u>4347566m</u>
District:	<u>Central</u>	Public Road Access:		<u>CR 36</u>
Quadrangle:	<u>West Union 7.5'</u>	Generally used farm name:		<u>Vogt, Gregory R. & Carolyn S.</u>
Watershed:	<u>Tributary of Wilhelm Run</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

*Please check the box that applies <input type="checkbox"/> SURFACE OWNER <input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance) <input type="checkbox"/> SURFACE OWNER (Impoundments/Pits) <input type="checkbox"/> COAL OWNER OR LESSEE <input type="checkbox"/> COAL OPERATOR <input type="checkbox"/> WATER PURVEYOR <input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD	FOR EXECUTION BY A NATURAL PERSON Signature: _____ Print Name: _____ Date: _____
	FOR EXECUTION BY A CORPORATION, ETC. Company: _____ By: _____ Its: _____ Signature: _____ Date: _____

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01/15/2016

WW-6AW
(1-12)

API# 47-017-06668 SHL & PAD DESIGN MODIFICATION

API NO. 47-017 - 06668 *MW*
OPERATOR WELL NO. Duckbill Unit 2H
Well Pad Name: Existing Vogt Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

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Comment and Waiver Provisions

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VOLUNTARY STATEMENT OF NO OBJECTION

I, Gregory Vogt, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

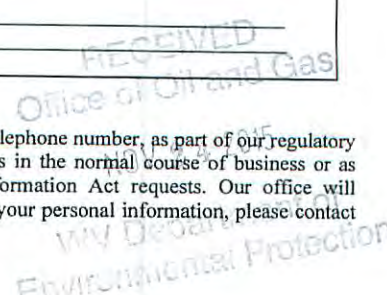
State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>511881m</u>
County:	<u>Doddridge</u>		Northing:	<u>4347566m</u>
District:	<u>Central</u>	Public Road Access:		<u>CR 38</u>
Quadrangle:	<u>West Union 7.5'</u>	Generally used farm name:		<u>Vogt, Gregory R. & Carolyn S.</u>
Watershed:	<u>Tributary of Wilhelm Run</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: <u>Gregory Vogt</u></p> <p>Print Name: <u>Gregory Vogt</u></p> <p>Date: <u>11-11-15</u></p> <p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: _____</p> <p>By: _____</p> <p>Its: _____</p> <p>Signature: _____</p> <p>Date: _____</p>
---	--

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01/15/2016

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

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VOLUNTARY STATEMENT OF NO OBJECTION

I, Steven W. Kelley, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

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District:	<u>Central</u>	Public Road Access:	<u>CR 36</u>
Quadrangle:	<u>West Union 7.5'</u>	Generally used farm name:	<u>Vogt, Gregory R. & Carolyn S.</u>
Watershed:	<u>Tributary of Wilhelm Run</u>		

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

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	<p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: _____</p> <p>By: _____</p> <p>Its: _____</p> <p>Signature: _____</p> <p>Date: _____</p>

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RECEIVED
Oil and Gas
WV Department of
Environmental Protection

01/15/2016

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

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VOLUNTARY STATEMENT OF NO OBJECTION

I, Troy Cunningham, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 511881m
County: Doddridge Northing: 4347566m
District: Central Public Road Access: CR 36
Quadrangle: West Union 7.5' Generally used farm name: Vogt, Gregory R. & Carolyn S.
Watershed: Tributary of Wilhelm Run

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p style="text-align: center;">FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: <u>Troy Cunningham</u> Print Name: <u>Troy Cunningham</u> Date: <u>11/16/15</u></p> <p style="text-align: center;">FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: _____ By: _____ Its: _____</p> <p>Signature: _____ Date: _____</p>
---	--

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RECEIVED
Office of Oil and Gas
WV Department of Environmental Protection

01/15/2016

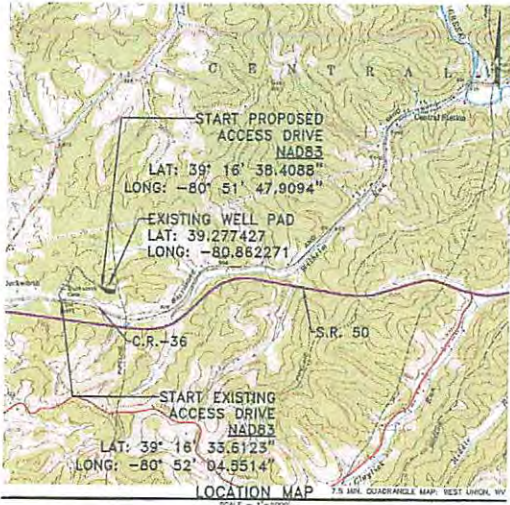
AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR

VOGT WELLS PAD EXTENSION

CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

APPROVED
WVDEP OOG
Modification
1/12/2016



- API# 1706169
- API# 1706170
- API# 1706206
- API# 1706236
- API# 1706266
- API# 1706550
- API# 1706665
- API# 1706666
- API# 1706667
- API# 1706668

WEST VIRGINIA 811
CALL BEFORE YOU DIG!
Dial 811 or 800.245.4848
Miss Utility of West Virginia

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING HOLIDAYS AND HOLIDAYS) PRIOR TO THE STARTING ANY EARTH DISTURBANCE ACTIVITIES. ALL CONTRACTORS INCLUDED IN THESE ACTIVITIES SHALL CONTACT THE UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

SOILS CLASSIFICATION
 Gd: GRAPE-PEABODY COMPLEX, 25 TO 35 PERCENT SLOPES
 Gd: DELPHI-UPSHUR SALT LOAMS, 0 TO 15 PERCENT SLOPES
 Gd: DELPHI-UPSHUR SALT LOAMS, 16 TO 25 PERCENT SLOPES

- LIST OF DRAWINGS**
- 1 OF 10 COVER SHEET
 - 2 OF 10 EXISTING CONDITIONS PLAN
 - 3 OF 10 EROSION AND SEDIMENT CONTROL PLAN
 - 4 OF 10 CROSS SECTIONS
 - 5 OF 10 CROSS SECTIONS
 - 6 OF 10 CROSS SECTIONS
 - 7 OF 10 NOTES & DETAILS
 - 8 OF 10 DETAILS
 - 9 OF 10 DETAILS
 - 10 OF 10 RECLAMATION PLAN

DIRECTIONS TO THE SITE
 FROM POWERSBORO, WV, TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT ONTO SUNBIRD ROAD AND TRAVEL 0.5 MILES. TURN RIGHT ONTO DUCKSHORN ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO START ON DUCKSHORN ROAD AND TRAVEL 0.5 MILES. TURN LEFT ONTO COOPER'S ROCK ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

ROAD & (25'±) FEET	3.49
DRELL PAD	3.38
FRAC PIT	3.60
PAD EXPANSION	1.00
TOTAL AFFECTED AREA	11.43
TOTAL UNDEVELOPED ACRES DISTURBED	4.84
TOTAL LINEAR FEET OF ACCESS ROAD	2.641

GENERAL NOTES

1. THE TOPOGRAPHIC SURVEY AND AS-BUILT UTILIZED FOR THIS BASE MAPPING WAS PERFORMED BY ALLEGHENY SURVEYS, INC. ON 11/17/14. REFER TO VOGT PAD AS-BUILT FOR HORIZONTAL AND VERTICAL DATA.
2. THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83), NORTH ZONE.
3. THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
4. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY POSING THE UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
5. A WETLAND PRESENCE/ABSENCE SURVEY WAS PERFORMED BY FOLETTA & ASSOCIATES, INC.
6. THE CUT & FILL QUANTITIES PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING SPACES AND TO VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
7. ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
8. A GEOTECHNICAL EVALUATION WAS PERFORMED BY RETNEW ASSOCIATES, INC. THE RESULTS OF THIS REPORT ARE SUMMARIZED IN THE GEOTECHNICAL REPORT FOR ANTERO RESOURCES VOGT WELL PAD EXPANSION, DATED MARCH 4, 2015.

WELL LOCATION RESTRICTIONS

ALL PAD AND FRACTURE PIT CONSTRUCTION COMPLIES WITH THE FOLLOWING RESTRICTIONS:

- DIST FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC PURPOSES
- DIST FROM OCCUPIED BUILDING OR DRAIN GREATER THAN 2,500 SF USED FOR POULTRY OR BARN ACQUIRED FROM THE CENTER OF THE PAD.
- 100 FEET FROM EDGE OF DISTURBANCE TO WETLANDS, PERMANENT STREAM, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 200 FEET FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TRIBUTARY STREAM.
- 100 FT IF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

OWNER	TWP/PARCEL	SUBDIVISION	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE
CENTRAL DISTRICT - DODDRIDGE COUNTY					
JERRY RICHMAN, JR. JR.	P10	204 / 535	18.60		0.10
	T11 B - PG 15			TOTAL	0.10
ANNABELL J. RUFFLE	P10	210 / 178	25.60	ACCESS ROAD A	2.66
	T11 B - PG 41			FRAC PIT	1.08
				TOTAL	2.63
GREGORY R. VOGT, JR. JR.	T11 B - PG 18	249 / 458	109.92	ACCESS ROAD A	0.30
				FRAC PIT	2.50
				DRELL PAD	3.38
				PAD EXPANSION	0.14
				TOTAL	6.82
Steven W. KERRY, JR. JR.	T11 B - PG 18.2	238 / 122	18.187	PAD EXPANSION	2.80
				TOTAL	2.80
				GRAND TOTAL	11.37

LOCAL ANTERO OFFICE
 178 IRL DRUM ROAD
 MT. CLAIR, WV 25643
 PHONE: (304) 622-3842

LOCAL CONTACTS
 ELLI WAGNER - ENVIRONMENTAL FISHERMAN
 PHONE: (304) 622-3842 EXT. 311
 CELL: (204) 476-0770

JOHN KARCAN - OPERATIONS SUPERINTENDENT
 CELL: (917) 356-1553

AARON KUHLEN - CONSTRUCTION SUPERVISOR
 CELL: (405) 221-5344

ANTHONY SMITH - FIELD ENGINEER
 PHONE: (304) 895-2400
 CELL: (204) 973-6198

ROBERT HINES - DESIGN MANAGER
 PHONE: (304) 848-4400
 CELL: (204) 627-7409

EXISTING AND PROPOSED WELL COORDINATES

Well Name	Northing (NAD83) (N)	Eastng (NAD83) (E)	Lot (NAD83) (Doc. Dep.)	Long (NAD83) (Doc. Dep.)
Dreled Well Marks Unit 1H	87,199.224	492,459.918	N039.27743236	W080.88220557
Dreled Well Seaborn Unit 1H	87,197.396	492,468.878	N032.27741712	W080.88220144
Dreled Well Seaborn Unit 2H	87,196.789	492,471.664	N039.27741208	W080.88216871
Dreled Well Violet Unit 1H	87,198.007	492,465.891	N026.27142222	W080.88223614
Permitted Well Duckshorn Unit 1H	87,192.635	492,461.606	N038.27737326	W080.88228292
Permitted Well Duckshorn Unit 2H	87,192.027	492,464.674	N039.27738619	W080.88234920
Permitted Well Maple Unit 1H	87,189.832	492,456.921	N039.27743743	W080.88234029
Permitted Well Maple Unit 2H	87,191.423	492,467.681	N039.27736318	W080.88221447
Permitted Well Seagr Unit 2H	87,190.815	492,470.648	N036.27738820	W080.88217875
Permitted Well Tulp Unit 1H	87,188.616	492,462.905	N032.27742730	W080.88227085

Well Name	Northing (NAD27) (N)	Eastng (NAD27) (E)	Lot (NAD27) (Doc. Dep.)	Long (NAD27) (Doc. Dep.)
Dreled Well Marks Unit 1H	87,105.046	492,043.194	N039.27735038	W080.88247678
Dreled Well Seaborn Unit 1H	87,106.820	492,052.152	N036.27735058	W080.88233788
Dreled Well Seaborn Unit 2H	87,108.212	492,055.140	N039.27735002	W080.88233793
Dreled Well Violet Unit 1H	87,107.421	492,049.167	N038.27732456	W080.88242735
Permitted Well Duckshorn Unit 1H	87,182.059	492,044.881	N038.27739172	W080.88245815
Permitted Well Duckshorn Unit 2H	87,181.451	492,047.840	N039.27739011	W080.88242042
Permitted Well Maple Unit 1H	87,189.358	492,040.207	N038.27735539	W080.88261151
Permitted Well Maple Unit 2H	87,190.547	492,050.837	N039.27738112	W080.88232059
Permitted Well Seagr Unit 2H	87,189.259	492,051.823	N039.27737876	W080.88235097
Permitted Well Tulp Unit 1H	87,188.040	492,048.180	N036.27734326	W080.88244207

FOR REVIEW ASSIGNED BY: _____ AS NOTED _____

MANAGER: _____
 DESIGNER: _____
 CHECKER: _____
 DATE: _____

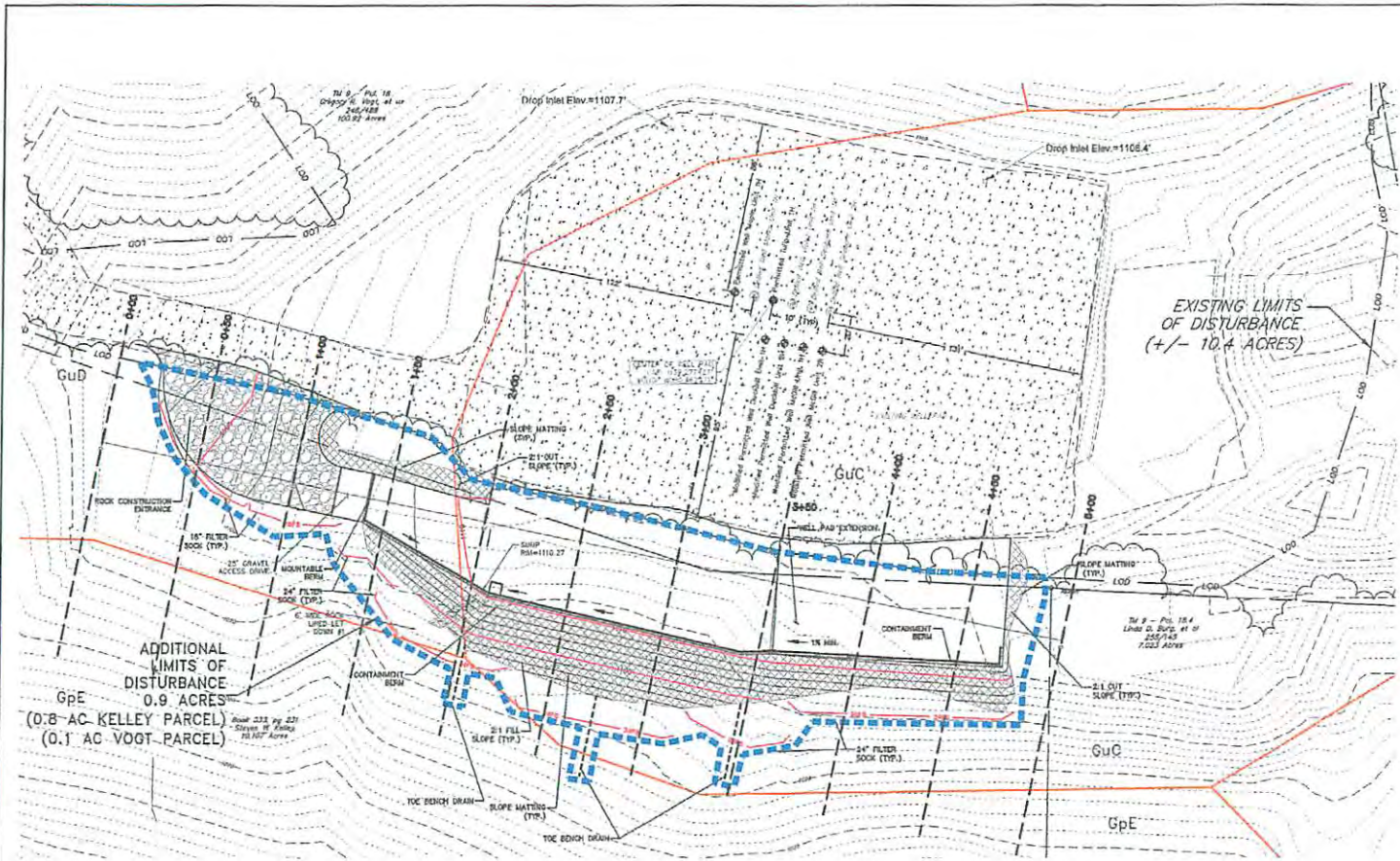
CLIENT: **Antero**

DATE: **06/09/2015**

SHEET NO. **1** OF **10**

DWG. NO. **095452082**

COVER SHEET
CONSTRUCTION DRAWINGS
FOR
VOGT WELLS PAD EXTENSION
DODDRIDGE COUNTY, WEST VIRGINIA



LEGEND

EXISTING PROPERTY LINE	---
EXISTING PAVED	---
EXISTING SIDE	---
EXISTING SIDE EMBANKMENT	---
EXISTING WALL	---
EXISTING TRT	---
EXISTING WATER CONTROL LINE	---
EXISTING BUSH CONTROL LINE	---
EXISTING DRAINAGE	---
EXISTING OVERHEAD ELECTRIC LINE	---
EXISTING UNDERGROUND ELECTRIC LINE	---
EXISTING GAS LINE	---
EXISTING SANITARY SEWER LINE	---
EXISTING FENCE LINE	---
EXISTING DRAINAGE POND	---
EXISTING STREAM	---
EXISTING STREAM IMPROVEMENT	---
EXISTING DRAINAGE	---
EXISTING LIMITS OF DISTURBANCE	---
EXISTING AREA OF INTEREST	---
EXISTING WETLAND	---
COUNTY LINE	---
SUBJECT LINE	---
PROPOSED WATER CONTROL LINE	---
PROPOSED BUSH CONTROL LINE	---
PROPOSED FENCE	---
PROPOSED WETLAND	---
PROPOSED STORM PIPE	---
LIMITS OF DISTURBANCE	---

APPROVED
WVDEP OOG
 Modification
 1/12/2016

FOR REVIEW APPROVED BY:

DATE: 05/09/2015

SCALE: 1"=30'

PROJECT NO: 15-0000000000

DATE: 05/09/2015

CLIENT: Antero

PROJECT: Antero

REVIEW ASSOCIATES, INC.

1000 10th Street, N.W., Raleigh, NC 27601

Phone: (919) 444-1722 Fax: (919) 444-1723

Website: www.review.com

EXISTING AND PROPOSED WELL COORDINATES

Well Name	Northing (NAD83) (N)	Eastng (NAD83) (E)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,189,224	492,458,918	4039.27742356	8050.86230567
Drilled Well Seaborn Unit 1H	87,187,396	492,468,876	4039.27741712	8050.86220144
Drilled Well Seaborn Unit 2H	87,186,799	492,471,904	4038.27741208	8050.86219871
Drilled Well Violet Unit 1H	87,188,007	492,485,081	4038.27742222	8050.86223614
Permitted Well Duckbill Unit 1H	87,192,635	492,461,686	4039.27737326	8050.86228393
Permitted Well Duckbill Unit 2H	87,192,027	492,464,674	4039.27735819	8050.86224120
Permitted Well Maple Unit 1H	87,189,822	492,456,931	4038.27743743	8050.86234029
Permitted Well Maple Unit 1H	87,181,423	492,467,851	4036.27736316	8050.86221447
Permitted Well Maple Unit 2H	87,180,813	492,470,848	4036.27735829	8050.86217875
Permitted Well Tulp Unit 1H	87,188,616	492,462,955	4039.27742730	8050.86227085

Well Name	Northing (NAD27) (N)	Eastng (NAD27) (E)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,188,646	492,043,194	4039.27735031	8050.86241679
Drilled Well Seaborn Unit 1H	87,186,920	492,052,182	4039.27733908	8050.86232256
Drilled Well Seaborn Unit 2H	87,186,212	492,055,140	4039.27733002	8050.86233793
Drilled Well Violet Unit 1H	87,187,431	492,048,167	4039.27743010	8050.86240735
Permitted Well Duckbill Unit 1H	87,192,029	492,044,941	4039.27729122	8050.86240515
Permitted Well Duckbill Unit 2H	87,181,451	492,047,949	4039.27738615	8050.86242042
Permitted Well Maple Unit 1H	87,189,296	492,040,207	4039.27735639	8050.86241151
Permitted Well Maple Unit 1H	87,189,296	492,040,207	4039.27735639	8050.86241151
Permitted Well Maple Unit 2H	87,180,229	492,053,923	4039.27727808	8050.86230097
Permitted Well Tulp Unit 1H	87,188,640	492,048,180	4039.27743428	8050.86244297

Well Name	API #
Drilled Well Marks Unit 1H	47-017-06266-00
Drilled Well Seaborn Unit 1H	47-017-06168-00
Drilled Well Seaborn Unit 2H	47-017-06170-00
Drilled Well Violet Unit 1H	47-017-06208-00
Permitted Well Duckbill Unit 1H	47-017-06467-00
Permitted Well Duckbill Unit 2H	47-017-06468-00
Permitted Well Maple Unit 1H	47-017-06469-00
Permitted Well Maple Unit 1H	47-017-06469-00
Permitted Well Maple Unit 2H	47-017-06466-00
Permitted Well Tulp Unit 1H	47-017-06216-00

EXISTING LIMITS OF DISTURBANCE:
 10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
 11.4 ACRES

Cut & Fill (Pad Extension Area)

Cut (yds)	+ 719
Stone	+ 918
Fill (yds)	- 4,096
Compaction	- 23
Excavation (yds)	- 842
Topsoil Replenishment	+ 230
Net (yds)	- 3,139
Topsoil Net (yds)	617

EROSION AND SEDIMENT CONTROL PLAN
 CONSTRUCTION DRAWINGS
 FOR
VOGT
 WELL PAD EXTENSION

DATE: 05/09/2015

SHEET NO. 3 OF 10

DWA NO. 095452082

CENTRAL DISTRICT: DOODRIDGE COUNTY, WEST VIRGINIA

NOT FOR CONSTRUCTION/NOT FOR BIDDING

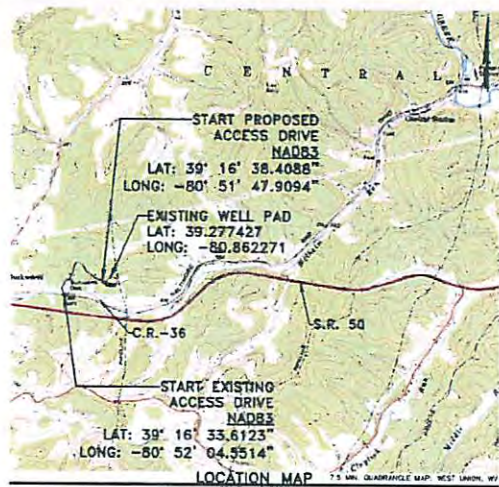
AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR

VOGT WELLS PAD EXTENSION

CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

Design Office
11-19-15



WEST VIRGINIA 811
CALL BEFORE YOU DIG! Dial 811 or 800.245.4848
Please follow all West Virginia 811 rules.

SOILS CLASSIFICATION
 G2: CLAY-PLUMB SAND, 25 TO 35 PERCENT SLOPE
 G3: CLAY-UPPER SILT LOAM, 5 TO 15 PERCENT SLOPE
 G4: CLAY-UPPER SILT LOAM, 15 TO 25 PERCENT SLOPE

- LIST OF DRAWINGS**
- 1 OF 15 COVER SHEET
 - 2 OF 15 EXISTING CONDUIT PLAN
 - 3 OF 15 EROSION AND SEDIMENT CONTROL PLAN
 - 4 OF 15 CROSS SECTIONS
 - 5 OF 15 CROSS SECTIONS
 - 6 OF 15 CROSS SECTIONS
 - 7 OF 15 NOTES & DETAILS
 - 8 OF 15 OFFER
 - 9 OF 15 DETAILS
 - 10 OF 15 RECLAMATION PLAN

DIRECTIONS TO THE SITE
 FROM THUNDER, WV: TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT ON SUNNYSIDE ROAD AND TRAVEL 0.3 MILES. TURN RIGHT ON DOCKWORTH ROAD AND TRAVEL 1.0 MILE. TURN RIGHT TO STAY ON DOCKWORTH ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTOD COOPER'S REEVE ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOD (AC)

ROW#2 (254) FEET	1.46
DRILL PAD	3.58
FRAC PAD	1.59
PAD EXPANSION	1.00
TOTAL AFFECTED AREA	11.43
TOTAL UNDEVELOPED ACRES DESTROYED	8.98
TOTAL CLEAR FEET OF ACCESS ROAD	2.541

- GENERAL NOTES**
1. THE TOPOGRAPHIC SURVEY AND AS-BUILT UTILIZED FOR THIS BASE MAPPING WAS PERFORMED BY ALLEGHENY SURVEYS, INC. ON 11/7/14. REFER TO VOGT PAD AS-BUILT FOR HORIZONTAL AND VERTICAL DATA.
 2. THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83) NORTH ZONE.
 3. THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83).
 4. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY HOPING MISS UTILITY OF WEST VIRGINIA AT 1-800-P4D-8844.
 5. A METEOROLOGICAL SURVEY WAS PERFORMED BY POTESTA & ASSOCIATES, INC.
 6. THE CLUT & PELL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING GRACES AND TO VERIFY EXISTING VOLUMES, METHODS AND PROCEDURES ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
 7. ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
 8. A DECEMNAL EVALUATION WAS PERFORMED BY HETEM ASSOCIATES, INC. THE RESULTS OF THIS REPORT ARE SUMMARIZED IN THE "GEOLOGICAL REPORT FOR ANTERO RESOURCES' VOGT WELL PAD EXPANSION," DATED MARCH 4, 2015.

- WELL LOCATION RESTRICTIONS**
- ALL PAD AND FRACTURE PIT CONSTRUCTION COMPLES WITH THE FOLLOWING RESTRICTIONS
- 200' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC PURPOSES
 - 525' FROM OCCUPIED DWELLING OR BARN SPACES, OR 2,500' FROM POLY OR CHURN BARRIERS FROM THE CENTER OF THE FID.
 - 100' FROM EDGE OF DISTURBANCE TO METEORIC PERFORMA, STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR.
 - 300' FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING (BOLT) STREAM.
 - 1,000' FROM EDGE OF DISTURBANCE TO A PUBLIC WATER SUPPLY.

PROPERTY OWNER INFORMATION - VOGT PAD AS-BUILT AND PAD EXPANSION

CENTRAL DISTRICT - DODDRIDGE COUNTY

OWNER	TYPICAL	DEVELOPER	TOTAL ACRES	TYPE OF RESTRICTION	ACRES
JERRY NORMAN, JR. et al	PO	284,372	13.25	ACCESS ROAD	0.20
				TOTAL	0.20
ANNABELL J. REEF et al	PO	762,178	26.43	ACCESS ROAD	2.38
				FRAC PIT	1.50
				TOTAL	3.88
GREGORY R. VOGT et al	TM & PO et al	248,689	180.82	ACCESS ROAD	3.80
				FRAC PIT	3.50
				PAD EXPANSION	0.14
				TOTAL	7.42
Steven W. Kelly, et al	TM & PO et al	218,723	18.167	PAD EXPANSION	0.90
				TOTAL	0.90
				GRAND TOTAL	12.27

LOCAL ANTERO OFFICE
 175 ELLIOTT ROAD
 MT. CLAIR, WV 26022
 PHONE (304) 822-2842

LOCAL CONTACTS
 ELLI WAGNER-ENVIRONMENTAL ENGINEER
 PHONE (304) 822-2842 EXT. 311
 CELL (304) 476-9770

JOHN HANCOCK-OPERATIONS SUPERINTENDENT
 CELL (877) 388-1513

KARON KUMBLE-CONSTRUCTION SUPERVISOR
 CELL (409) 227-5344

ANTHONY SMITH-FIELD ENGINEER
 PHONE (304) 822-2842
 CELL (304) 612-1998

ROBERT WELLS-DESIGN MANAGER
 PHONE (304) 842-4100
 CELL (304) 827-7405

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (N)	Eastng (NAD83) (E)	Lot (NAD83) (Doc. Dep.)	Long (NAD83) (Doc. Dep.)
Drilled Well Morris Unit 1H	87,198,224	482,459,918	N039 27743236	N039 86232057
Drilled Well Seabrook Unit 1H	87,197,216	482,468,875	N039 27741712	N039 86230144
Drilled Well Seabrook Unit 2H	87,196,788	482,471,864	N039 27741205	N039 86229169
Drilled Well Vaght Unit 1H	87,195,027	482,455,881	N039 27742221	N039 86227814
Drilled Well Seabrook Unit 2H	87,192,816	482,461,886	N039 27737320	N039 86228362
Permitted Well Dugan Unit 2H	87,192,027	482,464,874	N039 27735819	N039 86224925
Permitted Well Wade Unit 1H	87,190,822	482,458,874	N039 27735916	N039 86224229
Permitted Well Wade Unit 1H	87,191,423	482,461,887	N039 27735916	N039 86221145
Permitted Well Wade Unit 2H	87,190,822	482,470,848	N039 27735916	N039 86221175
Permitted Well Tule Unit 1H	87,189,816	482,462,809	N039 27742733	N039 86227088

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (N)	Eastng (NAD83) (E)	Lot (NAD83) (Doc. Dep.)	Long (NAD83) (Doc. Dep.)
Drilled Well Morris Unit 1H	87,198,248	482,043,194	N039 27735632	N039 86247979
Drilled Well Seabrook Unit 1H	87,196,823	482,052,182	N039 27733508	N039 86232708
Drilled Well Seabrook Unit 2H	87,196,212	482,055,140	N039 27733508	N039 86232703
Drilled Well Vaght Unit 1H	87,187,431	481,748,187	N039 27734186	N039 86240716
Permitted Well Dugan Unit 1H	87,192,029	482,244,361	N039 27729122	N039 86245515
Permitted Well Dugan Unit 2H	87,181,451	482,041,846	N039 27728615	N039 86242647
Permitted Well Wade Unit 1H	87,199,250	482,040,207	N039 27735916	N039 86261101
Permitted Well Wade Unit 2H	87,190,847	482,050,837	N039 27729112	N039 86238589
Permitted Well Tule Unit 2H	87,180,238	482,083,822	N039 27737805	N039 86232087
Permitted Well Tule Unit 1H	87,188,043	482,048,190	N039 27734526	N039 86242207

FOR REVIEW ASSOCIATE BY: [Signature]

DESIGN BY: [Signature]

DATE: 05/09/2015

SHEET NO. 1 OF 16

DWG. NO. 025452002

COVER SHEET CONSTRUCTION DRAWINGS FOR VOGT WELLS PAD EXTENSION CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

Antero

WEST VIRGINIA 811

REVIEW

Don 8970-171

NOT FOR CONSTRUCTION/NOT FOR BIDDING

AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS FOR VOGT WELLS PAD EXTENSION CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA



WEST VIRGINIA 811
CALL BEFORE YOU DIG!
Dial 811 or 800.245.4848
Like 811, it's free.

AT LEAST 48 HOURS, BUT NOT MORE THAN 60 HOURS, BEFORE ANY EXCAVATION BEGINS, YOU MUST CALL 811 TO REPORT ANY UNDERGROUND UTILITIES. YOU WILL RECEIVE A FREE SERVICE REPORT AND A LIST OF ALL UTILITIES THAT WILL BE AFFECTED BY YOUR EXCAVATION. YOU WILL BE NOTIFIED AT LEAST 48 HOURS BEFORE ANY EXCAVATION BEGINS.

SOILS CLASSIFICATION

G1C CLAY-PEATY COMPLEX, 25 TO 35 PERCENT SLOPE
G1D CLAY-PHLOM 5% TO 15 PERCENT SLOPE
G1E CLAY-PHLOM 5% TO 15 PERCENT SLOPE

LIST OF DRAWINGS

- 1 OF 15 COVER SHEET
- 2 OF 15 EXISTING UTILITIES PLAN
- 3 OF 15 DESIGN AND NUMBERING CONVEY PLAN
- 4 OF 15 EXISTING SECTIONS
- 5 OF 15 DESIGN SECTIONS
- 6 OF 15 DESIGN SECTIONS
- 7 OF 15 NOTES & DETAILS
- 8 OF 15 DETAILS
- 9 OF 15 DETAILS
- 10 OF 15 RELOCATION PLAN

- GENERAL NOTES**
1. THE SURVEYING SERVICE HAS BEEN UTILIZED FOR THE BASE SURVEY HAS BEEN PERFORMED BY ALLEGANY SURVEYS, INC. ON 11/17/14. REFER TO VOGT PAD AS-BUILT FOR HORIZONTAL AND VERTICAL DATA.
 2. THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83) NORTH ZONE.
 3. THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83) MEAN SEA LEVEL.
 4. THE UNLINED SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION, DEPTH, OR ANY EXCAVATION BY NOTIFYING THE QUALITY OF WEST VIRGINIA AT 1-800-548-4848.
 5. A NEIGHBORHOOD PRELIMINARY SURVEY WAS PERFORMED BY POTTS & ASSOCIATES, INC.
 6. THE CUT & FILL BARRETT CALLS ARE INCLUDED ON THIS PLAN AND FOR PERMITTING AND RECORDING PURPOSES. THE CUT & FILL BARRETT CALLS ARE NOT TO BE CONSIDERED AS A NEIGHBORHOOD PRELIMINARY SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL CALLS AND FOR NOTIFYING THE QUALITY OF WEST VIRGINIA PRIOR TO COMMENCEMENT OF WORK.
 7. ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
 8. A GEOTECHNICAL EVALUATION WAS PERFORMED BY RETEV ASSOCIATES, INC. THE RESULTS OF THIS REPORT ARE SUBMITTED AS THE "GEOTECHNICAL REPORT FOR VOGT WELLS PAD EXPANSION", DATED MARCH 4, 2015.
- WELL LOCATION RESTRICTIONS**
- ALL PAD AND FRACURE RECONSTRUCTION COMPLIES WITH THE FOLLOWING RESTRICTIONS:
- 1. 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC PURPOSES.
 - 2. 500' FROM OCCUPIED BUILDING OR BURNING DEVICES WITHIN 2,500' OF USED FOR POLARITY OF DATA RECORDS FROM THE CENTER OF THE PAD.
 - 3. 100' FROM EDGE OF DRAINAGE TO WETLANDS, WETLANDS, STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR.
 - 4. 100' FROM EDGE OF DRAINAGE TO A MAJORLY PENETRATING FLOW STREAM.
 - 5. 100' FROM A SOURCE OF BROAD WATER INTAKE TO A PUBLIC WATER SUPPLY.

PROPERTY OWNER INFORMATION - VOGT PAD AS-BUILT AND PAD EXPANSION

OWNER	TAXPANEL	DESCRIPT	TOTAL ACRES	TITLE OF INTEREST	ACRES
JOHN HODGKINS, JR.	104.0.10.18	284/873	28.80	ACCESS EASEMENT	0.19
			TOTAL		0.19
ANNABELL L BENTLEY	104.0.10.18	284/175	28.80	ACCESS ROAD	2.36
			TOTAL		2.36
OSPREY R. TUCKER, JR.	104.0.10.18	284/1490	28.80	ACCESS ROAD	2.36
			TOTAL		2.36
Sharon W. Kibler, et al.	104.0.10.18	284/1879	28.80	PAD EXPANSION	0.19
			TOTAL		2.36
			GRAND TOTAL		4.91

LOCAL ANTERO OFFICE

171 E. CHERRY ROAD
MT. CLEMENS, WV 26040
PHONE (204) 622-2047

LOCAL CONTACTS
DU BOIS-ENVIRONMENTAL ENGINEER
PHONE (204) 622-3663 EXT. 301
CELL (204) 416-8770

JOHN KANGAS-OPERATIONS SUPERVISOR
CELL (204) 208-1023

ANTHONY WOODS-CONSTRUCTION SUPERVISOR
CELL (204) 227-8544

ANTHONY GAUL-FIELD ENGINEER
PHONE (204) 622-3663 EXT. 303
CELL (204) 673-6106

ROBERT SMITH-DESIGN ENGINEER
PHONE (204) 622-6028
CELL (204) 627-7428

DIRECTIONS TO THE SITE

FROM PENNSYLVANIA, GO WEST, EAST ON US 50 FOR APPROXIMATELY 4.5 MILES. TURN LEFT ONTO SUPERSTOCK ROAD AND TRAVEL 0.3 MILES. TURN RIGHT ONTO DODDRIDGE ROAD AND TRAVEL 10 MILES. TURN RIGHT TO STAY ON DODDRIDGE ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTO COVER'S HOSE ROAD AND MAKE AT THE VOGT WELLS PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOO (AC)

ACROSS STREET	2.36
ACCESS ROAD	2.36
FRACURE PAD	0.19
TOTAL	4.91
171AC AFFECTED AREA	17.05
171AC WOODED ACRES	1.89
TOTAL UNDER PERMIT OF ACCESS ROAD	2.94

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (N)	Easting (NAD83) (E)	Lat (NAD83) (Dec. Deg)	Long (NAD83) (Dec. Deg)
Drilled Well Yorkie Unit 1H	87199.224	482,405.976	N40N2774326	W08W0220557
Drilled Well Sycamore Unit 1H	87189.288	482,488.878	N40N2774772	W08W0220740
Drilled Well Sycamore Unit 2H	87195.798	482,472.874	N40N2774789	W08W0220671
Drilled Well Wood Unit 1H	87198.997	482,465.891	N40N2774822	W08W0220734
Permitted Well Sycamore Unit 1H	87182.825	482,461.882	N40N2773796	W08W0220493
Permitted Well Sycamore Unit 2H	87183.927	482,461.874	N40N2773809	W08W0220430
Permitted Well Maple Unit 1H	87188.832	482,458.821	N40N2774343	W08W0220429
Permitted Well Maple Unit 2H	87187.833	482,457.821	N40N2774343	W08W0220412
Permitted Well Maple Unit 3H	87188.835	482,458.824	N40N2773999	W08W0220478
Permitted Well Tule Unit 1H	87184.879	482,462.822	N40N2774720	W08W0220785

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (N)	Easting (NAD83) (E)	Lat (NAD83) (Dec. Deg)	Long (NAD83) (Dec. Deg)
Drilled Well Stone Unit 1H	87188.840	482,043.194	N40N2772632	W08W02217878
Drilled Well Sycamore Unit 1H	87188.840	482,058.182	N40N2773308	W08W02217980
Drilled Well Sycamore Unit 2H	87188.840	482,058.182	N40N2773302	W08W02217983
Drilled Well Wood Unit 1H	87187.831	482,048.187	N40N2774038	W08W02218078
Permitted Well Sycamore Unit 1H	87182.827	482,041.881	N40N2773919	W08W02218256
Permitted Well Sycamore Unit 2H	87181.828	482,041.881	N40N2773805	W08W02218298
Permitted Well Maple Unit 1H	87188.838	482,048.227	N40N2773339	W08W02218151
Permitted Well Maple Unit 2H	87188.847	482,048.227	N40N2773312	W08W02218099
Permitted Well Maple Unit 3H	87188.838	482,055.823	N40N27737828	W08W02218207
Permitted Well Tule Unit 1H	87188.840	482,048.182	N40N2773488	W08W02218277

COVER SHEET
CONSTRUCTION DRAWINGS
FOR
VOGT WELLS PAD EXTENSION
WELL PAD EXTENSION

CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 5/20/2015
SHEET NO. 1 OF 15
DWG. NO. 056452080

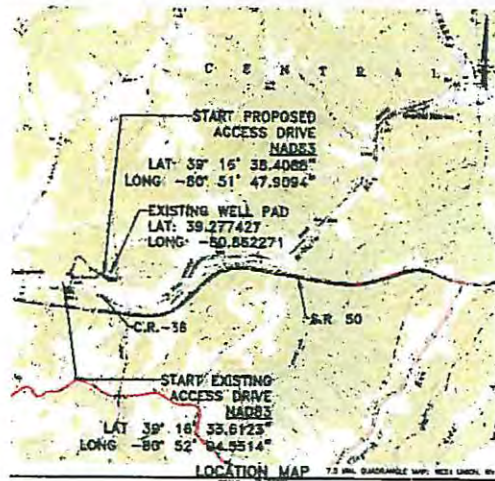
17-06068p00

AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR

VOGT WELL PAD EXTENSION CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

St. W. Kelley
11-11-15



WEST VIRGINIA 811
CALL BEFORE YOU DIG! Dial 811 or 800.245.4848
If an Utility is 24/7 in operation.

SOILS CLASSIFICATION
SIC: CLAY-LOESSY COMPLEX, 25 TO 35 PERCENT SHALES
SIC: SILTY-UPONAR SILT LOAM, 8 TO 15 PERCENT SLOPES
SIC: SILTY-UPONAR SILT LOAM, 15 TO 25 PERCENT SLOPES

LIST OF DRAWINGS

- 1 OF 10 COVER SHEET
- 2 OF 10 EXISTING CONDITIONS PLAN
- 3 OF 10 FINISH AND ELEVATION CONTROL PLAN
- 4 OF 10 CROSS SECTIONS
- 5 OF 10 CROSS SECTIONS
- 6 OF 10 CROSS SECTIONS
- 7 OF 10 NOTES & DETAILS
- 8 OF 10 DETAILS
- 9 OF 10 DETAILS
- 10 OF 10 RECONSTRUCTION PLAN

DIRECTIONS TO THE SITE
FROM PHOENIX, KY TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT OND GARLAND ROAD AND TRAVEL 0.3 MILES. TURN RIGHT OND DODD NORTH ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO STAY ON DODD NORTH ROAD AND TRAVEL 0.5 MILES. TURN LEFT OND COOPER'S ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LCO (AC)

AS-BUILT (2581 FEET)	3.65
WELL PAD	3.35
PAD EXPANSION	3.39
PAD EXPANSION	1.02
TOTAL PROJECTED AREA	11.43
TOTAL PROJECTED ACRES	2.60
TOTAL SQUARE FEET OF ACRES @ 43,560	2,541

GENERAL NOTES

- THE TOPOGRAPHIC SURVEY AND AS-BUILT LOCATED FOR THIS GATE HAVING WAS PERFORMED BY ALBERTSON SURVEY, INC. ON 11/2/14. REFER TO VOGT PAD AS-BUILT FOR HORIZONTAL AND VERTICAL DATA.
- THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83).
- THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
- THE LINES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY VERIFYING THE EXISTENCE OF WEST VIRGINIA AT 1-800-245-4848.
- A REFLECTED PRESENCE/ABSENCE SURVEY WAS PERFORMED BY PROSITA & ASSOCIATES, INC.
- THE CUT & FILL QUANTITY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING QUANTITY AND TO VERIFY EXISTING VOLUMES, SECTIONS AND PROFILES AND MAKE ANY CORRECTIONS TO BE PROMPTLY TO THE CONTRACTOR'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
- ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
- A GEOTECHNICAL EVALUATION WAS PERFORMED BY RETIRED ASSOCIATES, INC. THE RESULTS OF THIS REPORT ARE SUMMARIZED IN THE GEOTECHNICAL REPORT FOR ANTIPO RESOURCES VOGT WELL PAD EXPANSION, DATED MARCH 4, 2015.

WELL LOCATION RESTRICTIONS

ALL PAD AND FINISHING IN CONSTRUCTION COMPLETES WITH THE FOLLOWING RESTRICTIONS:

- 200' FROM ANY EXISTING WELL OR DEVELOPED SPRING USED FOR DRINKING OR DOMESTIC PURPOSES.
- 150' FROM EXISTING OR PLANNED OR BUILT LATER THAN 2500' OF USED FOR POULTRY OR SWINE RAISING FROM THE CORNER OF PAD.
- 100' FROM EDGE OF CONTINUOUS TO METEORIC NORMAL STREAM, NATURAL OR ARTIFICIAL, LAKE, POND OR RESERVOIR.
- 100' FROM EDGE OF CONTINUOUS TO A NATURALLY OCCURRING TRUST SPRING.
- 100' OF A SURFACE OF GROUND WATER RELATE TO A PUBLIC WATER SUPPLY.

PROPERTY OWNER INFORMATION - VOGT PAD AS-BUILT AND PAD EXPANSION

CENTRAL DISTRICT - DODDRIDGE COUNTY

OWNER	TAXPAYER	DEED/DATE	TOTAL ACRES	TYPE OF INTEREST	ACRES
JOSEPH HERRMANN, et al	PO	394/200	18.80	ACCESS ROAD	8.50
		1/19/12		TOTAL	8.50
AMABLE J. HOFFE	HO	352/178	26.40	ACCESS ROAD	2.40
		1/16/11		PAD EXT	1.80
				TOTAL	2.60
GREGORY S. VOGT, et al	TM B - Pd 18	248/683	189.82	ACCESS ROAD	0.80
				WELL PAD	2.50
				PAD EXPANSION	3.39
				TOTAL	6.69
Steven W. Kelley, et al	TM B - Pd 18	228/523	15.167	PAD EXPANSION	0.90
				TOTAL	0.90
				GRAND TOTAL	15.25

LOCAL ANTIPO OFFICE
177 E. CREEK ROAD 328 WHITE OAK ROAD
WE CLARE, WV 26040 BRIDGEPORT, WV 26032
PHONE (204) 822-3842 PHONE (204) 822-3842

LOCAL CONTACTS
CJ BRADSHAW - SUPERVISOR/VICE ENGINEER
PHONE (204) 822-3842 EXT. 231
CELL (204) 474-8778

JOHN KANIGAN - OPERATIONS SUPERVISOR/ENGINEER
CELL (204) 249-1253

MAURICE BRADSHAW - SUPERVISOR/ENGINEER
CELL (204) 237-6214

ANTHONY WELLS - FIELD ENGINEER
PHONE (204) 888-3460
CELL (204) 813-4166

FORREST WELLS - DESIGN MANAGER
PHONE (204) 841-4258
CELL (204) 827-7422

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (PAD 07)

Well Name	Northing (NAD83) (N)	Easting (NAD83) (E)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Defunct Well Spring Unit 10	87,355,274	482,438,818	40.30 2774338	W080 8233517
Defunct Well Spring Unit 08	87,355,299	482,438,818	40.30 2774338	W080 8233517
Defunct Well Spring Unit 28	87,355,758	482,438,818	40.30 2774338	W080 8233517
Defunct Well Spring Unit 12	87,355,857	482,438,818	40.30 2774338	W080 8233517
Permitted Well Double Unit 04	87,355,826	482,438,818	40.30 2774338	W080 8233517
Permitted Well Double Unit 24	87,355,827	482,438,818	40.30 2774338	W080 8233517
Permitted Well Single Unit 04	87,355,827	482,438,818	40.30 2774338	W080 8233517
Permitted Well Single Unit 24	87,355,827	482,438,818	40.30 2774338	W080 8233517
Permitted Well Single Unit 04	87,355,827	482,438,818	40.30 2774338	W080 8233517
Permitted Well Single Unit 24	87,355,827	482,438,818	40.30 2774338	W080 8233517
Permitted Well Single Unit 04	87,355,827	482,438,818	40.30 2774338	W080 8233517
Permitted Well Single Unit 24	87,355,827	482,438,818	40.30 2774338	W080 8233517

WELLHEAD COORDINATES (PAD 27)

Well Name	Northing (NAD83) (N)	Easting (NAD83) (E)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Defunct Well Spring Unit 08	87,188,846	482,438,818	40.18 2773532	W080 8233517
Defunct Well Spring Unit 12	87,188,850	482,438,818	40.18 2773532	W080 8233517
Defunct Well Spring Unit 28	87,188,854	482,438,818	40.18 2773532	W080 8233517
Defunct Well Spring Unit 04	87,188,858	482,438,818	40.18 2773532	W080 8233517
Permitted Well Double Unit 04	87,188,862	482,438,818	40.18 2773532	W080 8233517
Permitted Well Double Unit 24	87,188,866	482,438,818	40.18 2773532	W080 8233517
Permitted Well Single Unit 04	87,188,870	482,438,818	40.18 2773532	W080 8233517
Permitted Well Single Unit 24	87,188,874	482,438,818	40.18 2773532	W080 8233517
Permitted Well Single Unit 04	87,188,878	482,438,818	40.18 2773532	W080 8233517
Permitted Well Single Unit 24	87,188,882	482,438,818	40.18 2773532	W080 8233517
Permitted Well Single Unit 04	87,188,886	482,438,818	40.18 2773532	W080 8233517
Permitted Well Single Unit 24	87,188,890	482,438,818	40.18 2773532	W080 8233517

FOR SETTING ASSEMBLY BY: _____

DATE: 05/09/2015

SHEET NO. 1 OF 10

DRAWING NO. 08-432022

Antero

REVIEW

CONSTRUCTION DRAWINGS

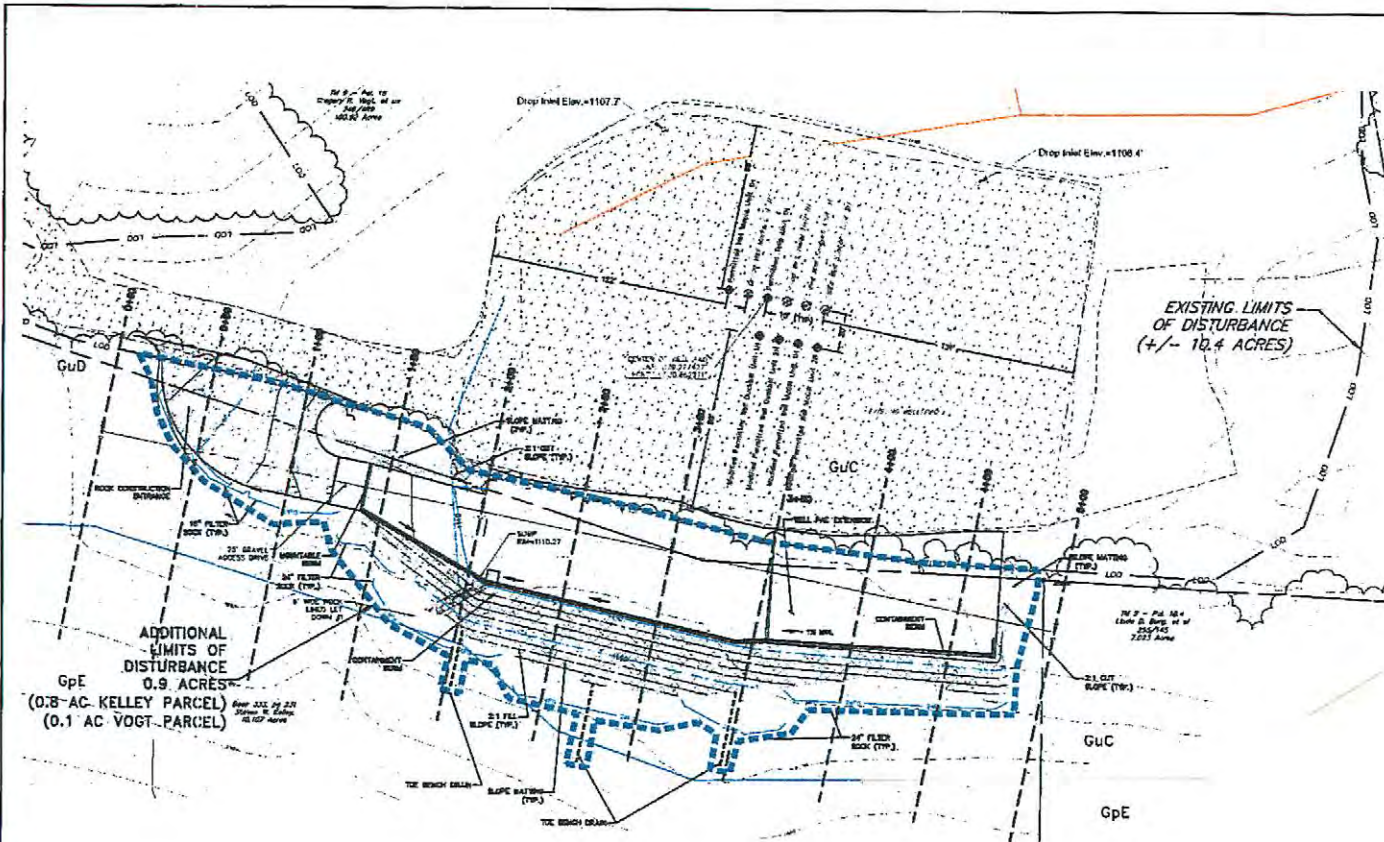
VOGT WELL PAD EXTENSION

CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

NOT FOR CONSTRUCTION/NOT FOR BIDDING

17-068900

Stuckelley
11-11-15

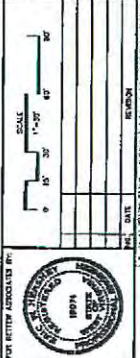


LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING EASE
- EXISTING EASE BOUNDARY
- EXISTING EASELINE
- EXISTING EASE
- EXISTING MAJOR CENTER LINE
- EXISTING MINOR CENTER LINE
- EXISTING MAJOR PIPE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING GAS LINE
- EXISTING SHEDDING ZONE LINE
- EXISTING FENCE LINE
- EXISTING BARRIAGE FENCE
- EXISTING SLOPE - PROPOSED
- EXISTING SLOPE - EXISTING
- EXISTING SLOPE - PROPOSED
- EXISTING SLOPE - EXISTING
- EXISTING AREA OF DISTURBANCE
- EXISTING AREA OF INTEREST
- EXISTING WELLS

COUNTY LINE

- MOUND LINE
- PROPOSED MAJOR CENTER LINE
- PROPOSED MINOR CENTER LINE
- PROPOSED EASELINE
- PROPOSED EASE
- PROPOSED SLOPE PIPE
- PROPOSED DISTURBANCE LIMITS OF DISTURBANCE



ADDITIONAL LIMITS OF DISTURBANCE 0.9 ACRES
GpE
(0.8-AC. KELLEY PARCEL)
(0.1 AC. VOGT PARCEL)

EXISTING LIMITS OF DISTURBANCE (+/- 10.4 ACRES)

EXISTING AND PROPOSED WELL COORDINATES

Well Name	Well ID	Well Depth (ft)	Well Type	Well Status	Well ID	Well Depth (ft)	Well Type	Well Status
Drilled Well Nicks Unit 1H	87186254	482,430,989	W028.27732526	W030.06232257				
Drilled Well Sisson Unit 1H	87197316	482,488,876	W028.27737172	W030.06232444				
Drilled Well Sisson Unit 2H	87188758	482,471,894	W028.27732526	W030.06232877				
Drilled Well Viall Unit 1H	87188267	482,443,994	W028.27742222	W030.06232444				
Permitted Well Decatur Unit 1H	87182838	482,461,888	W028.27732228	W030.06232877				
Permitted Well Decatur Unit 2H	87182827	482,444,874	W028.27732819	W030.06232192				
Permitted Well Sisson Unit 1H	87191822	482,436,921	W028.27742222	W030.06232444				
Permitted Well Sisson Unit 2H	87190885	482,470,948	W028.27732819	W030.06232877				
Permitted Well Sisson Unit 1H	87196498	482,442,999	W028.27742222	W030.06232444				

Well Name	Well ID	Well Depth (ft)	Well Type	Well Status	Well ID	Well Depth (ft)	Well Type	Well Status
Drilled Well Nicks Unit 1H	87186254	482,430,989	W028.27732526	W030.06232257				
Drilled Well Sisson Unit 1H	87197316	482,488,876	W028.27737172	W030.06232444				
Drilled Well Sisson Unit 2H	87188758	482,471,894	W028.27732526	W030.06232877				
Drilled Well Viall Unit 1H	87188267	482,443,994	W028.27742222	W030.06232444				
Permitted Well Decatur Unit 1H	87182838	482,461,888	W028.27732228	W030.06232877				
Permitted Well Decatur Unit 2H	87182827	482,444,874	W028.27732819	W030.06232192				
Permitted Well Sisson Unit 1H	87191822	482,436,921	W028.27742222	W030.06232444				
Permitted Well Sisson Unit 2H	87190885	482,470,948	W028.27732819	W030.06232877				
Permitted Well Sisson Unit 1H	87196498	482,442,999	W028.27742222	W030.06232444				

Well Name	APN #
Drilled Well Nicks Unit 1H	# 47-017-08214-08
Drilled Well Sisson Unit 1H	# 47-017-08168-00
Drilled Well Sisson Unit 2H	# 47-017-08170-00
Drilled Well Viall Unit 1H	# 47-017-08220-00
Permitted Well Decatur Unit 1H	# 47-017-08067-00
Permitted Well Decatur Unit 2H	# 47-017-08069-00
Permitted Well Sisson Unit 1H	# 47-017-08150-00
Permitted Well Sisson Unit 2H	# 47-017-08152-00
Permitted Well Sisson Unit 1H	# 47-017-08230-00

EXISTING LIMITS OF DISTURBANCE: 10.4 ACRES
NEW TOTAL LIMITS OF DISTURBANCE: 11.4 ACRES

Cut & Fill (Pond Extension Area)

Cut (yds)	750
Fill (yds)	1,100
Volume	1,850
Area (sq ft)	100,000
Depth (ft)	1.85
Permitted Well Sisson Unit 1H	# 47-017-08150-00
Permitted Well Sisson Unit 2H	# 47-017-08152-00
Permitted Well Sisson Unit 1H	# 47-017-08230-00

Antero

REVIEW

EROSION AND SEDIMENT CONTROL PLAN
CONSTRUCTION DRAWINGS

VOGT
WELL PAD EXTENSION

DATE: 11/11/15
SHEET NO. 3 OF 10
DWC NO. 098452083

NOT FOR CONSTRUCTION, NOT FOR BIDDING

00289790-01

AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR VOGT WELLS PAD EXTENSION CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

Froy Cunningham
11/16/15

RECEIVED
Office of Oil and Gas
November 24 2015
Department of Environmental Protection

WEST VIRGINIA 811
CALL BEFORE YOU DIG!
Dial 811 or 800.245.4848
WVA (2012) 17-10-01

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (INCLUDING HOLIDAYS AND WEEKENDS) PRIOR TO STARTING ANY EXCAVATION OR DRILLING, ALL CONTRACTORS, PROPERTY OWNERS, CONTRACTORS SHALL CONTACT WEST VIRGINIA AT 811 OR 800-245-4848

SOILS CLASSIFICATION
S6: OUPH-PLANDY COMPLEX, 25 TO 35 PERCENT SLOPES
S7: OUPH-UPPER SILT LOAM, 8 TO 15 PERCENT SLOPES
S8: OUPH-UPPER SILT LOAM, 15 TO 25 PERCENT SLOPES

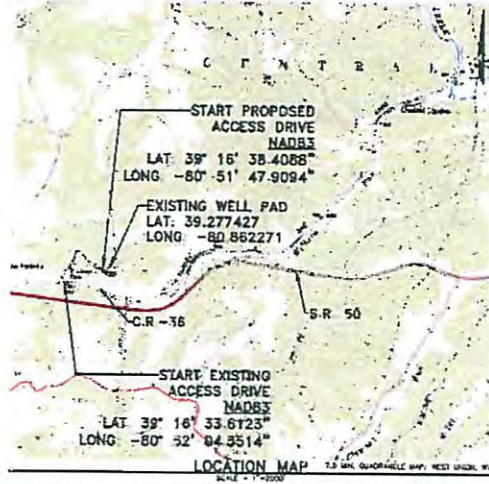
LIST OF DRAWINGS
1. OF 10 SHEETS COVER SHEET
2. OF 10 SHEETS EXISTING CONDITIONS PLAN
3. OF 10 SHEETS EROSION AND SEDIMENT CONTROL PLAN
4. OF 10 SHEETS CROSS SECTIONS
5. OF 10 SHEETS CROSS SECTIONS
6. OF 10 SHEETS CROSS SECTIONS
7. OF 10 SHEETS NOTES & DETAILS
8. OF 10 SHEETS DETAILS
9. OF 10 SHEETS DETAILS
10. OF 10 SHEETS RECLAMATION PLAN

DIRECTIONS TO THE SITE
FROM PENNINGTON: WYO TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES, TURN LEFT ONTOW SUNNYSIDE ROAD AND TRAVEL 0.3 MILES, TURN RIGHT ONTOW BUCKMOUTH ROAD AND TRAVEL 1.5 MILES, TURN RIGHT TO STAY ON BUCKMOUTH ROAD AND TRAVEL 0.3 MILES, TURN LEFT ONTOW COOPER'S PRIZE ROAD AND ARRIVE AT THE VOGT WELLS PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOD (AC)	
ROAD & UTILITIES	2.16
DRILL PAD	3.38
FRACURE	1.58
PAD EXPANSION	1.00
TOTAL AFFECTED AREA	11.42
TOTAL UNDEVELOPED PORES	1.00
TOTAL UNDEVELOPED PORES	5.99
TOTAL UNDEVELOPED PORES	2.94

WELLHEAD COORDINATES (PAD 83)					
Well Name	Northing (NAD83) [ft]	Easting (NAD83) [ft]	Lat (NAD83) (Dec. Deg)	Long (NAD83) (Dec. Deg)	WOB NO
Drilled Well Sump Unit 1H	87,189,224	482,458,819	N43N 2774825N	W80N 8022057	
Drilled Well Sump Unit 1H	87,187,205	482,458,879	N43N 2774819	W80N 8022044	
Drilled Well Sump Unit 2H	87,195,798	482,471,854	N43N 2774826	W80N 8022061	
Drilled Well Sump Unit 2H	87,195,797	482,452,859	N43N 2774822	W80N 8022054	
Permitted Well Sump Unit 1H	87,192,830	482,481,885	N43N 2772826	W80N 8022062	
Permitted Well Sump Unit 1H	87,192,827	482,454,874	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,198,832	482,456,831	N43N 2774813	W80N 8022058	
Permitted Well Sump Unit 1H	87,191,823	482,457,844	N43N 2772826	W80N 8022061	
Permitted Well Sump Unit 2H	87,195,815	482,470,848	N43N 2772826	W80N 8022061	
Permitted Well Sump Unit 2H	87,196,816	482,452,862	N43N 2774820	W80N 8022058	

DATE: 08/28/2015
SHEET NO. 3 OF 10
DWG NO. 085432067



GENERAL NOTES

- THE TOPOGRAPHIC SURVEY AND AS-BUILT UTILIZED FOR THIS BASE MAPPING WAS PERFORMED BY ALBERTSON SURVEY, INC. ON 11/27/14. REFER TO VOGT PAD AS-BUILT FOR HORIZONTAL AND VERTICAL DATA.
- THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83), NORTH ZONE.
- THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (VD 88).
- THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY IDENTIFYING POSIBILITY OF WEST VIRGINIA AT 811 OR 800-245-4848.
- A RELIABLE PRESENCE/ABSENCE SURVEY WAS PERFORMED BY PERSTA & ASSOCIATES, INC.
- THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING GRADES AND TO VERIFY LABOR, VOLUMES, METHODS AND PROCEDURES. ANY DISCREPANCY ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
- ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
- A GEOLOGICAL EVALUATION WAS PERFORMED BY BETTEN ASSOCIATES, INC. THE RESULTS OF THIS REPORT ARE SUMMARIZED IN THE "GEOLOGICAL REPORT FOR ANTERO RESOURCES WELL PAD EXPANSION", DATED MARCH 4, 2015.

WELL LOCATION RESTRICTIONS

ALL PAD AND FRACTURE PAT CONSTRUCTION COMPLES WITH THE FOLLOWING RESTRICTIONS:

- 150' FROM AN EXISTING WELL OR DEVELOPED SPACING USED FOR HYDRALIC FRACTURING
- 500' FROM EXISTING DRILLING OR BURNING DEEPER THAN 2500' OF USED FOR POLYMER OR CEMENT MEGAMOD FROM THE CENTER OF THE PAD.
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERMANENT STREAMS, NATURAL OR HISTORICAL LAND, POND OR RESERVOIR.
- 300' FROM EDGE OF DISTURBANCE TO A NATURALLY PERSEVERING TRIBUTARY STREAM.
- 100' OF A SURFACE OF GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

PROPERTY OWNER INFORMATION - VOGT PAD AS BUILT AND PAD EXPANSION					
CENTRAL DISTRICT - DODDRIDGE COUNTY					
OWNER	TAMPARCEL	DEEDPAGE	TOTAL ACRES	TYPE OF INTEREST/ACCESS	ACRES
JERRY NORMAN et al	P10	224/220	10.60	ACCESS/Road	9.70
				TOTAL	9.70
ANDRELL Z PROPERTIES	R10	260/118	75.00	ACCESS/Road	2.58
				FRACURE	1.00
				TOTAL	3.58
ELISABETH E. VOGL, et al	TN 81-PAD 18	240/488	100.80	ACCESS/Road	0.90
				FRACURE	2.50
				DRILL PAD	1.20
				PAD EXPANSION	0.12
				TOTAL	4.72
James W. Sibley et al	TN 81-PAD 18	240/488	100.80	PAD EXPANSION	8.80
				FRACURE	4.88
				DRILL PAD	1.42
				SUMMARY TOTAL	11.42

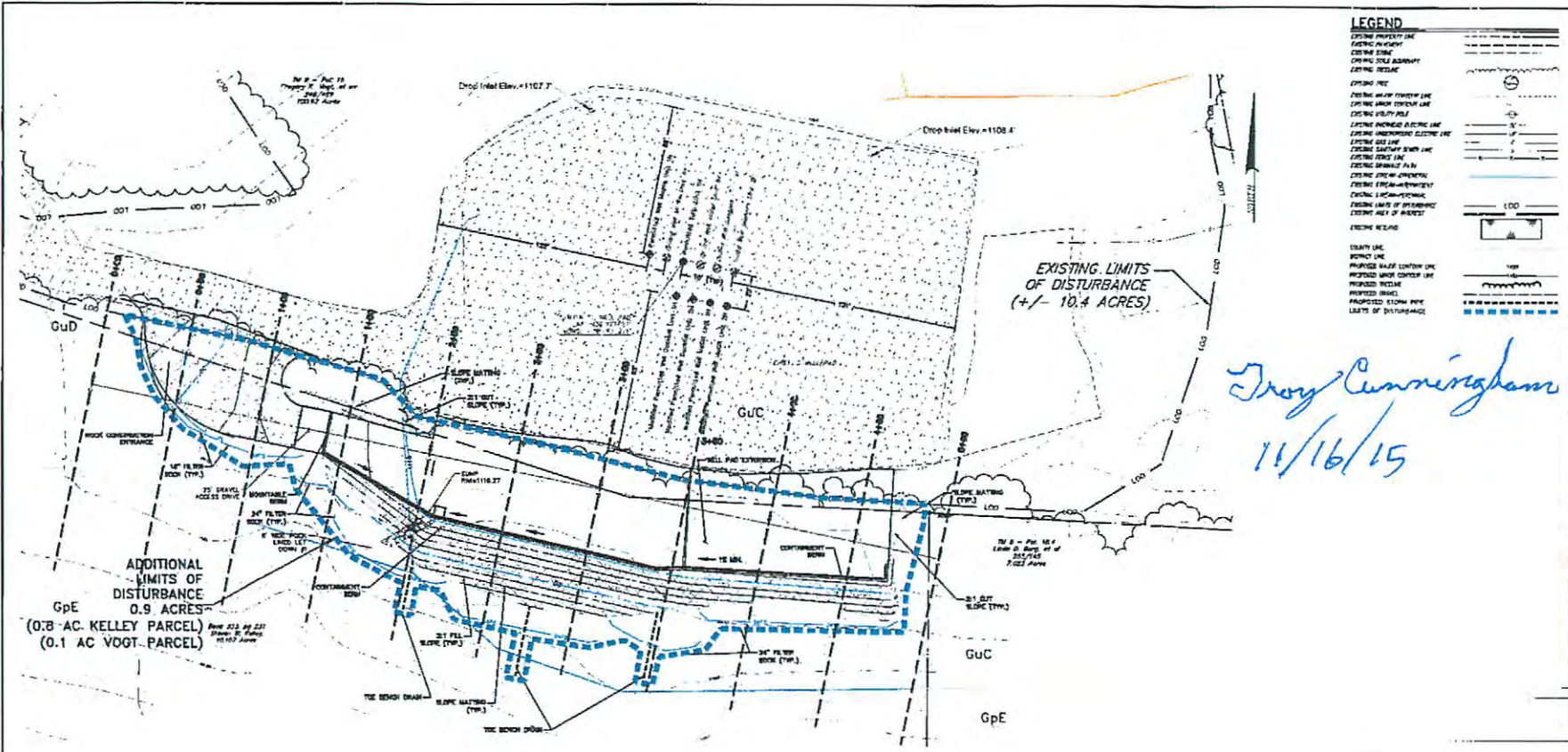
EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (PAD 83)					
Well Name	Northing (NAD83) [ft]	Easting (NAD83) [ft]	Lat (NAD83) (Dec. Deg)	Long (NAD83) (Dec. Deg)	WOB NO
Drilled Well Sump Unit 1H	87,189,224	482,458,819	N43N 2774825N	W80N 8022057	
Drilled Well Sump Unit 1H	87,187,205	482,458,879	N43N 2774819	W80N 8022044	
Drilled Well Sump Unit 2H	87,195,798	482,471,854	N43N 2774826	W80N 8022061	
Drilled Well Sump Unit 2H	87,195,797	482,452,859	N43N 2774822	W80N 8022054	
Permitted Well Sump Unit 1H	87,192,830	482,481,885	N43N 2772826	W80N 8022062	
Permitted Well Sump Unit 1H	87,192,827	482,454,874	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,198,832	482,456,831	N43N 2774813	W80N 8022058	
Permitted Well Sump Unit 1H	87,191,823	482,457,844	N43N 2772826	W80N 8022061	
Permitted Well Sump Unit 2H	87,195,815	482,470,848	N43N 2772826	W80N 8022061	
Permitted Well Sump Unit 2H	87,196,816	482,452,862	N43N 2774820	W80N 8022058	

WELLHEAD COORDINATES (PAD 23)					
Well Name	Northing (NAD83) [ft]	Easting (NAD83) [ft]	Lat (NAD83) (Dec. Deg)	Long (NAD83) (Dec. Deg)	WOB NO
Drilled Well Sump Unit 1H	87,188,848	482,243,184	N43N 2775032	W80N 8021526	
Drilled Well Sump Unit 2H	87,188,820	482,282,182	N43N 2775308	W80N 8023728	
Drilled Well Sump Unit 2H	87,186,270	482,286,140	N43N 2775307	W80N 8023728	
Drilled Well Sump Unit 1H	87,185,431	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,182,959	482,284,961	N43N 2772822	W80N 8022055	
Permitted Well Sump Unit 2H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 2H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 2H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	
Permitted Well Sump Unit 1H	87,182,959	482,282,182	N43N 2772819	W80N 8022055	

NOT FOR CONSTRUCTION/NOT FOR BIDDING

17
08/29/2015



LEGEND

EXISTING PROPERTY LINE
 EXISTING PLUMBING
 EXISTING SEWER
 EXISTING GAS ADJUST
 EXISTING RETIAR
 EXISTING POE
 EXISTING FIRE FIGHTING LINE
 EXISTING UNDER CONSTRUCTION LINE
 EXISTING UNDERGROUND ELECTRIC LINE
 EXISTING UNDERGROUND CABLE
 EXISTING GAS LINE
 EXISTING SANITARY SEWER LINE
 EXISTING FIRE LINE
 EXISTING SPRAWL IN PL
 EXISTING UTILITY SPRING
 EXISTING SPECIAL-USE PROPERTY
 EXISTING LIAISON-PROPERTY
 EXISTING LIMITS OF DISTURBANCE
 EXISTING ASSET OF INTEREST
 EXISTING RETIAR

COUNTY LINE
 BOUNDARY LINE
 PROPOSED BASE CONTROL LINE
 PROPOSED UNDER CONTROL LINE
 PROPOSED BOUNDARY
 PROPOSED STORM PIPE
 LIMITS OF DISTURBANCE

Troy Cunningham
 11/16/15

FOR REVIEW ASSIGNED BY

APPROVED: ACCESS, LEVING, DE, MINOR REV, UNED BY, CATER BY, DATE, DATE, DATE, DATE, DATE, DATE, DATE

DATE: 05/09/2015

SHEET NO. 3 OF 10

DWG. NO. 050420002

REVIEW

REVIEW ASSOCIATES, INC.
 5150 NE ORANGE AVENUE, SUITE 203
 PORTLAND, OREGON 97218
 PHONE (503) 444-1232 FAX (503) 444-1232
 WWW.REVIEWASSOCIATES.COM

EROSION AND SEDIMENT CONTROL PLAN
 CONSTRUCTION DRAWINGS

FOR VOGT
 WELL PAD EXTENSION

CENTRAL DISTRICT, DOORIDGE COUNTY, WEST MICHIGAN

EXISTING AND PROPOSED WELL COORDINATES

Well Name	Northing (NAD83) [N]	Easting (NAD83) [E]	Lat (NAD83) [Dec. Deg.]	Long (NAD83) [Dec. Deg.]
Drilled Well Works Unit 14	87,193,274	482,456,916	N43D2733236	W09D 882370527
Drilled Well Seaborn Unit 14	87,197,349	482,466,879	N43D277717173	W09D 882322114
Drilled Well Seaborn Unit 24	87,196,738	482,471,864	N43D27741208	W09D 88236977
Drilled Well Violet Unit 14	87,198,017	482,469,981	N43D 27746723	W09D 88212814
Permitted Well Quikill Unit 14	87,192,273	482,461,849	N43D 27737338	W09D 88229252
Permitted Well Comble Unit 24	87,192,077	482,464,874	N43D 27736618	W09D 88224620
Permitted Well Maple Unit 14	87,199,831	482,456,321	N43D 27742742	W09D 88234029
Permitted Well Maple Unit 24	87,191,472	482,457,681	N43D 2774314	W09D 88221442
Permitted Well MCCR Unit 24	87,192,315	482,470,848	N43D 27739899	W09D 88218783
Permitted Well Pad Unit 14	87,196,648	482,462,923	N43D 27742730	W09D 88227709

Well Name	Northing (NAD27) [N]	Easting (NAD27) [E]	Lat (NAD27) [Dec. Deg.]	Long (NAD27) [Dec. Deg.]
Drilled Well Works Unit 14	87,196,848	482,453,924	N43D 27739331	W09D 88247678
Drilled Well Seaborn Unit 14	87,196,820	482,453,923	N43D 27733046	W09D 88237286
Drilled Well Seaborn Unit 24	87,196,212	482,455,748	N43D 27733002	W09D 88232793
Drilled Well Violet Unit 14	87,197,431	482,458,137	N43D 27736918	W09D 88240720
Permitted Well Quikill Unit 14	87,192,058	482,464,981	N43D 2774122	W09D 88246515
Permitted Well Comble Unit 24	87,193,421	482,467,846	N43D 27736615	W09D 88243942
Permitted Well Maple Unit 14	87,193,234	482,466,327	N43D 2773529	W09D 88238588
Permitted Well MCCR Unit 14	87,190,247	482,458,837	N43D 2772912	W09D 88238388
Permitted Well MCCR Unit 24	87,190,228	482,455,933	N43D 2772829	W09D 88222097
Permitted Well Pad Unit 14	87,196,648	482,464,920	N43D 2774314	W09D 88244207

Well Name	ASD #
Drilled Well Works Unit 14	# 47-037-08246-01
Drilled Well Seaborn Unit 14	# 47-073-04185-01
Drilled Well Seaborn Unit 24	# 47-073-04170-01
Drilled Well Violet Unit 14	# 47-073-06309-01
Permitted Well Quikill Unit 14	# 47-073-06667-01
Permitted Well Comble Unit 24	# 47-073-06666-01
Permitted Well Maple Unit 14	# 47-073-06665-01
Permitted Well MCCR Unit 14	# 47-073-06664-01
Permitted Well MCCR Unit 24	# 47-073-06663-01

Cut & Fill (Pad Excised on Area)

Call Depth	Depth (ft) ±		± 7.78
Volume	±		± 100
Fill (ft) ±	± 4.08		
Compaction	±		± 75
Channel Section	Area (sq-ft) ±	Depth (ft) ±	± 80
Total Right-of-Way	± 3.24		
Net Total			± 3.24
Topsoil (net ft) ±	± 0.15		

EXISTING LIMITS OF DISTURBANCE:
 10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
 11.4 ACRES

17-0166500-01