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 1706666, Well #: MCGILL UNIT 2H

Top 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,

Laura L. Adkins

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

WW-6B
(04/15)

API NO. 47- 017 - 06666 MOD
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

API# 47-017-06666 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 Corporat	494488557	017 -Doddric	Central	West Union 7.5'
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: McGill 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 X Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow X Deep _____
Horizontal X

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: 19200' MD

11) Proposed Horizontal Leg Length: 11013'

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 X

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

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WW-6B
(04/15)

API NO. 47- 017 - 06666
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

API# 47-017-06666 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#	2475'	2475'	CTS, 1008 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	19200'	19200'	4880 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-H/POZ & 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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WW-6B
(10/14)

API NO. 47- 017 - 06666
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

API# 47-017-06666 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.

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API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

WW-9
(9/13)

API Number 47 - 017 - 06666
Operator's Well No. McGill 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 _____

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental Representative

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144026297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 23 day of November, 20 15

Kara Quackenbush Notary Public

My commission expires July 21, 2018

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17-06666MOD

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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17-06666 MOD

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

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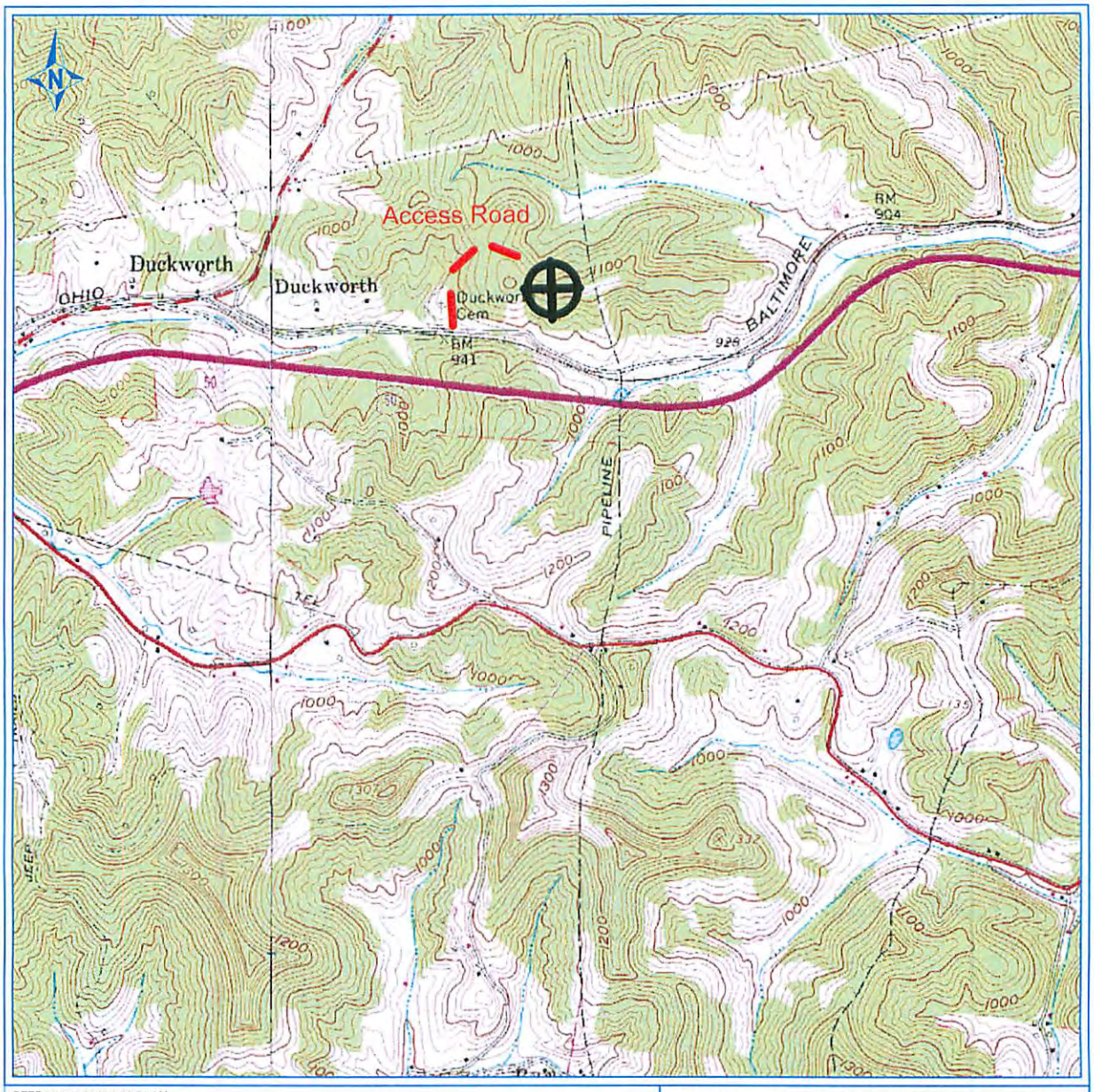
17-0666664000



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

ANTERO RESOURCES CORPORATION

APPALACHIAN BASIN

Vogt Pad

McGill Unit 2H

Doddridge County

0 2,500

FEET

REMARKS

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

October 19, 2012

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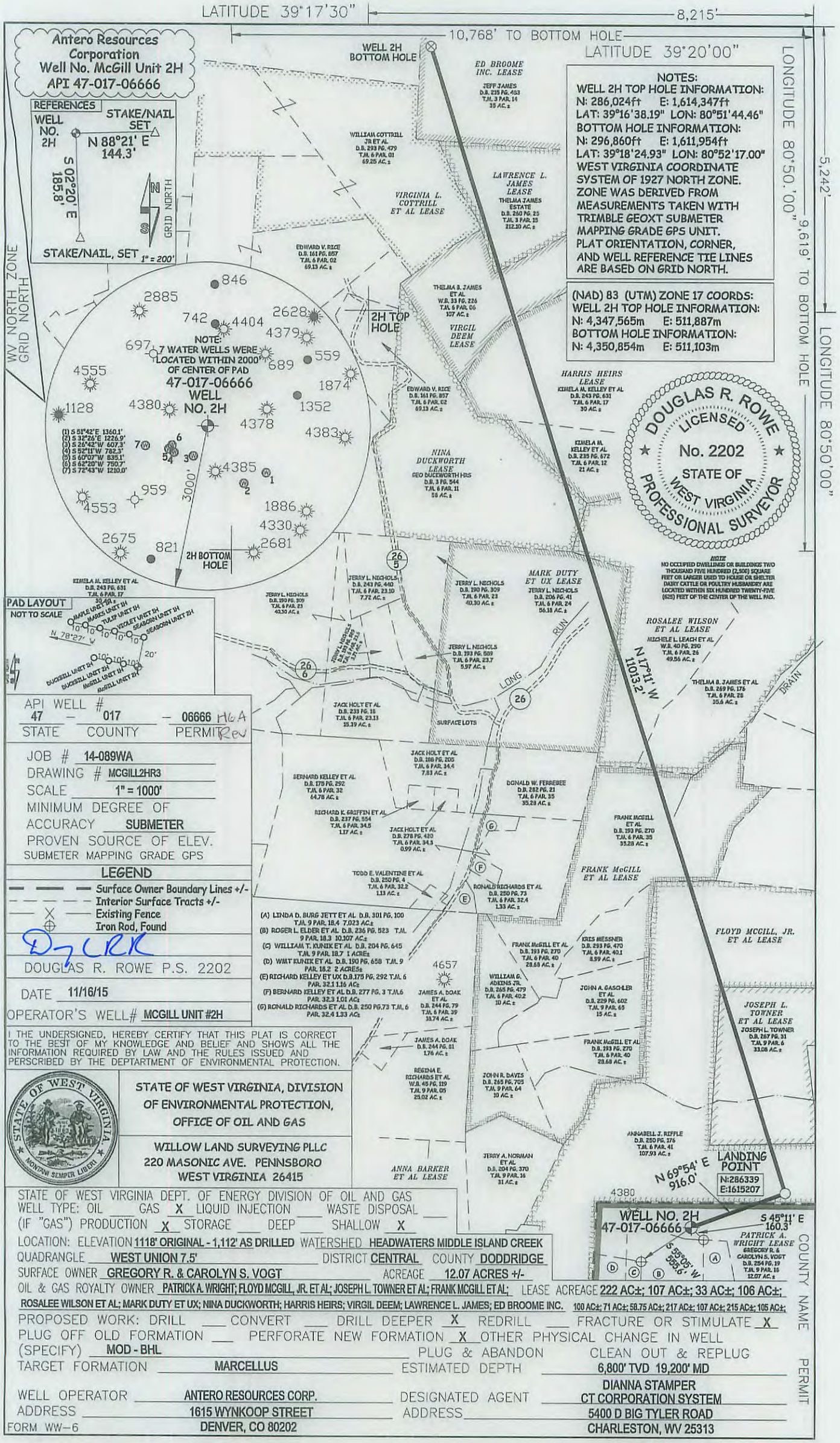


API WELL # 47 - 017 - 06666 H6A
STATE COUNTY PERMIT Rev

JOB # 14-089WA
DRAWING # MCGILL2HR3
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

DRR

DOUGLAS R. ROWE P.S. 2202

DATE 11/16/15

OPERATOR'S WELL# MCGILL 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 DEPTARTMENT OF ENVIRONMENTAL PROTECTION.

STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

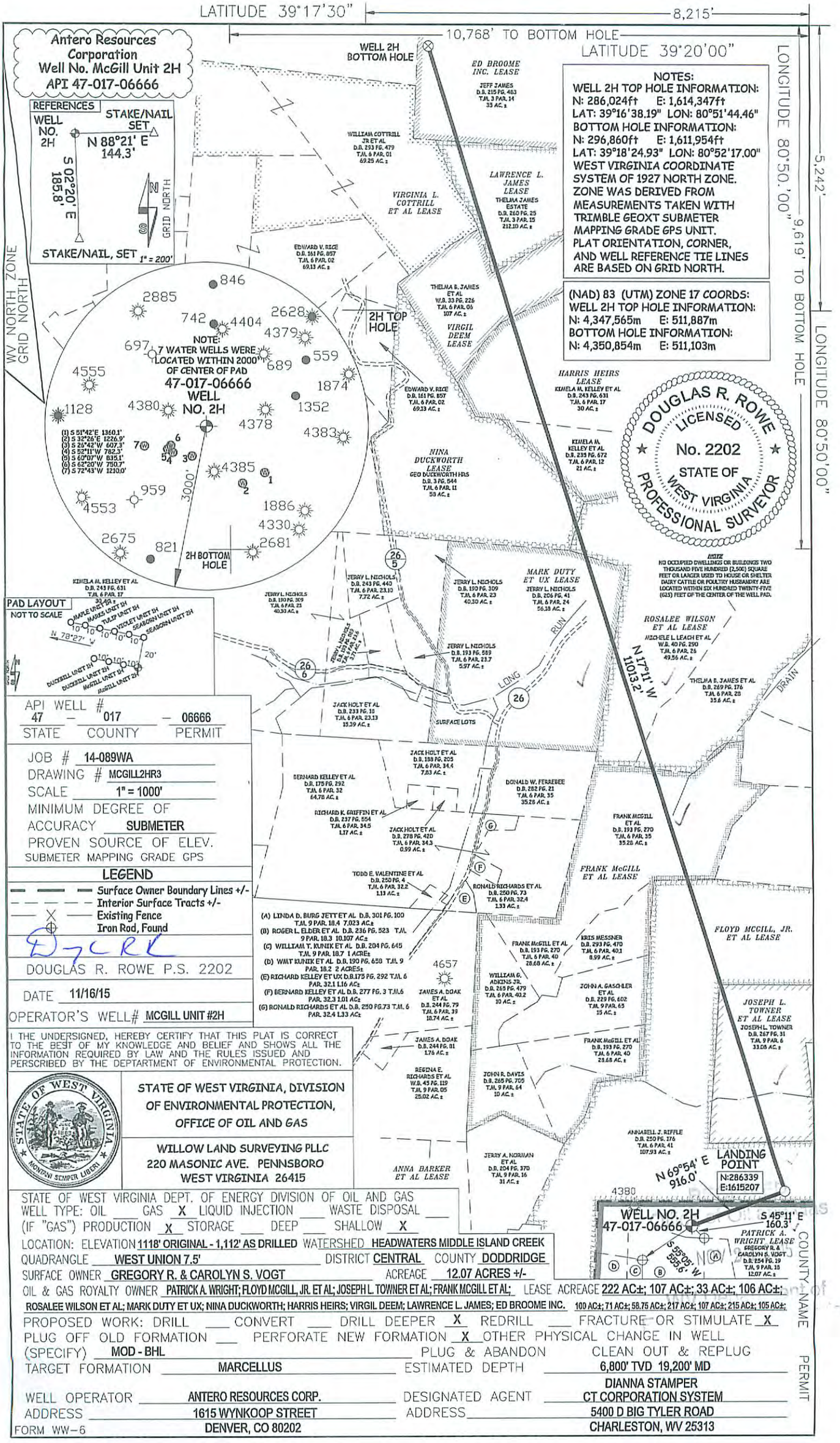
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415

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' 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; JOSEPH L. TOWNER ET AL; FRANK MCGILL ET AL; LEASE ACREAGE 222 AC±; 107 AC±; 33 AC±; 106 AC±;
ROSALEE WILSON ET AL; MARK DUTY ET UX; NINA DUCKWORTH; HARRIS HEIRS; VIRGIL DEEM; LAWRENCE L. JAMES; ED BROOME INC. 100 AC±; 71 AC±; 58.75 AC±; 217 AC±; 107 AC±; 215 AC±; 105 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 PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,800' TVD 19,200' MD

WELL OPERATOR ANTERO RESOURCES CORP.
ADDRESS 1615 WYNKOOP STREET
DENVER, CO 80202

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

FORM WW-6


LATITUDE 39°17'30"
8,215'
10,768' TO BOTTOM HOLE
LATITUDE 39°20'00"
LONGITUDE 80°50'00"
5,242'
9,619' TO BOTTOM HOLE
LONGITUDE 80°50'00"
Antero Resources Corporation
Well No. McGill Unit 2H
API 47-017-06666
WELL 2H BOTTOM HOLE
2H TOP HOLE
2H BOTTOM HOLE
REFERENCES
WELL NO. 2H
STAKE/NAIL SET
N 88°21' E 144.3'
S 02°20' E 185.8'
GRID NORTH
STAKE/NAIL, SET 1" = 200'
WV NORTH ZONE GRID NORTH
NOTE: 7 WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD
47-017-06666 WELL NO. 2H
3000'
(1) S 51°42'E 1360.1'
(2) S 32°26'E 1226.9'
(3) S 25°42'W 607.3'
(4) S 52°11'W 782.3'
(5) S 60°07'W 835.1'
(6) S 62°20'W 750.2'
(7) S 72°43'W 1210.0'
NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 286,024ft E: 1,614,347ft
LAT: 39°16'38.19" LON: 80°51'44.46"
BOTTOM HOLE INFORMATION:
N: 296,860ft E: 1,611,954ft
LAT: 39°18'24.93" LON: 80°52'17.00"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.
ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT.
PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.
(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 4,347,565m E: 511,887m
BOTTOM HOLE INFORMATION:
N: 4,350,854m E: 511,103m
DOUGLAS R. ROWE LICENSED No. 2202 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR
NOTE
NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
ED BROOME INC. LEASE
JEFF JAMES D.B. 215 PG. 463 T.M. 3 PAR. 14 33 AC. ±
WILLIAM COTTRILL JR ET AL D.B. 293 PG. 479 T.M. 6 PAR. 01 69.25 AC. ±
VIRGINIA L. COTTRILL ET AL LEASE
LAWRENCE L. JAMES LEASE
THELMA JAMES ESTATE D.B. 260 PG. 25 T.M. 3 PAR. 15 212.10 AC. ±
EDWARD V. RICE D.B. 161 PG. 857 T.M. 6 PAR. 02 69.33 AC. ±
THELMA B. JAMES ET AL W.B. 33 PG. 226 T.M. 6 PAR. 05 107 AC. ±
VIRGIL DEEM LEASE
HARRIS HEIRS LEASE
KIMELA M. KELLEY ET AL D.B. 243 PG. 631 T.M. 6 PAR. 17 30 AC. ±
KIMELA M. KELLEY ET AL D.B. 235 PG. 672 T.M. 6 PAR. 12 21 AC. ±
NINA DUCKWORTH LEASE GEO DUCKWORTH HRS D.B. 3 PG. 544 T.M. 6 PAR. 11 59 AC. ±
KIMELA M. KELLEY ET AL D.B. 243 PG. 631 T.M. 6 PAR. 17 30.40 AC. ±
JERRY L. NICHOLS D.B. 243 PG. 440 T.M. 6 PAR. 23.10 7.72 AC. ±
JERRY L. NICHOLS D.B. 190 PG. 309 T.M. 6 PAR. 23 40.30 AC. ±
MARK DUTY ET UX LEASE
JERRY L. NICHOLS D.B. 206 PG. 41 T.M. 6 PAR. 24 56.18 AC. ±
JERRY L. NICHOLS D.B. 193 PG. 589 T.M. 6 PAR. 23.7 5.97 AC. ±
ROSALEE WILSON ET AL LEASE
MICHELE L. LEACH ET AL W.B. 40 PG. 290 T.M. 6 PAR. 26 49.56 AC. ±
THELMA B. JAMES ET AL D.B. 269 PG. 176 T.M. 6 PAR. 25 35.6 AC. ±
N 17°11' W 11013.2'
RUN
LONG
DRAIN
JACK HOLT ET AL D.B. 233 PG. 18 T.M. 6 PAR. 23.13 15.39 AC. ±
SURFACE LOTS
JACK HOLT ET AL D.B. 188 PG. 205 T.M. 6 PAR. 34.4 7.03 AC. ±
BERNARD KELLEY ET AL D.B. 175 PG. 292 T.M. 6 PAR. 32 64.78 AC. ±
DONALD W. FERREBEE D.B. 282 PG. 21 T.M. 6 PAR. 35 35.28 AC. ±
RICHARD K. GRIFFIN ET AL D.B. 237 PG. 554 T.M. 6 PAR. 34.5 1.17 AC. ±
JACK HOLT ET AL D.B. 278 PG. 420 T.M. 6 PAR. 34.3 0.99 AC. ±
FRANK McGILL ET AL D.B. 193 PG. 270 T.M. 6 PAR. 35 35.28 AC. ±
TODD E. VALENTINE ET AL D.B. 250 PG. 4 T.M. 6 PAR. 32.2 1.13 AC. ±
RONALD RICHARDS ET AL D.B. 250 PG. 73 T.M. 6 PAR. 32.4 1.33 AC. ±
FRANK McGILL ET AL LEASE
(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. 523 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 1.16 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±
FRANK McGILL ET AL D.B. 193 PG. 270 T.M. 6 PAR. 40 28.68 AC. ±
KRIS MESSNER D.B. 293 PG. 470 T.M. 6 PAR. 40.1 8.99 AC. ±
FLOYD MCGILL, JR. ET AL LEASE
WILLIAM G. ADKINS JR. D.B. 265 PG. 479 T.M. 6 PAR. 40.2 10 AC. ±
JOHN A. GASCHLER ET AL D.B. 229 PG. 602 T.M. 9 PAR. 65 15 AC. ±
4657
JAMES A. DOAK ET AL D.B. 244 PG. 79 T.M. 6 PAR. 39 18.74 AC. ±
JOSEPH L. TOWNER ET AL LEASE
JOSEPH L. TOWNER D.B. 267 PG. 31 T.M. 9 PAR. 6 33.05 AC. ±
JAMES A. DOAK D.B. 244 PG. 81 1.75 AC. ±
FRANK McGILL ET AL D.B. 193 PG. 270 T.M. 6 PAR. 40 28.68 AC. ±
REGINA E. RICHARDS ET AL W.B. 45 PG. 119 T.M. 9 PAR. 05 25.02 AC. ±
JOHN R. DAVIS D.B. 265 PG. 705 T.M. 9 PAR. 64 10 AC. ±
ANNABELL J. RIFFLE D.B. 250 PG. 176 T.M. 6 PAR. 41 107.93 AC. ±
ANNA BARKER ET AL LEASE
JERRY A. NORMAN ET AL D.B. 204 PG. 370 T.M. 9 PAR. 16 31 AC. ±
LANDING POINT
N:286339
E:1615207
N 69°54' E 916.0'
4380
WELL NO. 2H
47-017-06666
S 45°11' E 160.3'
S 55°05' 55"S 6' W
PATRICK A. WRIGHT LEASE
GREGORY R. & CAROLYN S. VOGT D.B. 254 PG. 19 T.M. 9 PAR. 18 12.07 AC. ±
COUNTY-NAME PERMIT
PAD LAYOUT
NOT TO SCALE
MAPLE UNIT 1H
HARRIS UNIT 1H
TULIP UNIT 1H
VIOLET UNIT 1H
SEABORN UNIT 1H
SEABORN UNIT 2H
DUCKBILL UNIT 1H
DUCKBILL UNIT 2H
McGILL UNIT 1H
McGILL UNIT 2H
N 78°27' W
20'
API WELL # 47 – 017 – 06666
STATE COUNTY PERMIT
JOB # 14-089WA
DRAWING # MCGILL2HR3
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
DRR
DOUGLAS R. ROWE P.S. 2202
DATE 11/16/15
OPERATOR'S WELL# MCGILL 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 DEPTARTMENT 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' 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; JOSEPH L. TOWNER ET AL; FRANK MCGILL ET AL; LEASE ACREAGE 222 AC±; 107 AC±; 33 AC±; 106 AC±;
ROSALEE WILSON ET AL; MARK DUTY ET UX; NINA DUCKWORTH; HARRIS HEIRS; VIRGIL DEEM; LAWRENCE L. JAMES; ED BROOME INC. 109 AC±; 71 AC±; 58.75 AC±; 217 AC±; 107 AC±; 215 AC±; 105 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 PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,800' TVD 19,200' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313
FORM WW-6

WW-6A1

Operator's Well Number McGill Unit 2H
API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

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
Patrick A. Wright Lease			
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**
Floyd McGill, Jr., et al Lease			
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**
Joseph L. Towner, et ux Lease			
Joseph L. Towner, et ux	Key Oil Company	1/8	0179/0035
Key Oil Company	Antero Resources Corporation	*Partial Assignment of Oil & Gas Leases	0256/0285
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Frank McGill, et al Lease			
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**
Rosalee Wilson, et al Lease			
Rosalee Wilson	Antero Resources Appalachian Corporation	1/8+	0266/0708
New Freedom Energy, LLC	**Antero Resources Corporation**	**Assignment**	**0336/0127**
Mark Duty, et ux Lease			
Mark Duty, et ux	Key Oil Company	1/8	0185/0200
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0276/0523
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Nina Duckworth Lease			
Nina Duckworth	**Antero Resources Corporation**	**1/8+**	**0323/0604**
Harris Heirs Lease			
Harris Heirs	Devonian Appalachian Corporation	1/8	0161/0198
Devonian Appalachian Corporation	New Freedom Energy, LLC	Deed, Assignment & Agreement	0203/0346
New Freedom Energy, LLC	**Antero Resources Corporation**	**Assignment**	**0336/0127**

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

WW-6A1

Operator's Well Number McGill Unit 2H
API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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(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
Virgil Deem Lease			
Virgil Deem	Petroleum Development Corporation	1/8	0123/0211
Petroleum Development Corporation	PDC Mountaineer, LLC	Assignment	0240/0118
PDC Mountaineer, LLC	Antero Resources Appalachian Corporation	Assignment	0278/0607
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Lawrence L. James, et ux			
Lawrence L. James, et ux	Key Oil Company	1/8	0169/0644
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0256/0285
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Virginia L. Cottrill, et al Lease			
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
Energy 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**

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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.**

****CONTINUED ON NEXT PAGE****

WW-6A1
(5/13)

Operator's Well No. McGill Unit 2H

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

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)

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(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
Ed Broome, Inc. Lease				
	Ed Broome, Inc.	Antero Resources Appalachian Corporation	1/8+	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
Its: VP of Production

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

17-06666 MOD

FORM WW-6A1
EXHIBIT 1

FILED
JUN 10 2013
IN THE OFFICE OF SECRETARY OF STATE

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.wvsos.com
E-mail: business@wvsos.com
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

APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY

**** 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:

1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation

2. Date Certificate of Authority was issued in West Virginia: 6/25/2008

3. Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)

4. Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)

5. Other amendments:
(attach additional pages if necessary)

6. 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) 357-7310
Contact Name — Phone Number

7. Signature information (See below *Important Legal Notice Regarding Signature):

Print Name of Signer: Alvyn A. Schopp — Title/Capacity: Authorized Person

Signature: [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.

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Office of Oil and Gas
2015
W.V. Department of
Environmental Protection

WW-6A
(9-13)

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION API NO. 47- 017 - 06666 Mod
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

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

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

API NO. 47- 017 - 06666 Mod
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

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.

Received
Office of Oil & Gas
NOV 24 2015
WV Department of
Environmental Protection

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.**

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

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.

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

WW-6A
(8-13)

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

API NO. 47- 017 - 06666 Mod
OPERATOR WELL NO. McGill 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.

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 23 day of November.

Notary Public

My Commission Expires July 21, 2018

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

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

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. Pennsboro, WV 26415
Owner:	Annabell J. Riffle (1 source: 1210')
Address:	1538 Duckworth Rd. Greenwood, WV 26415

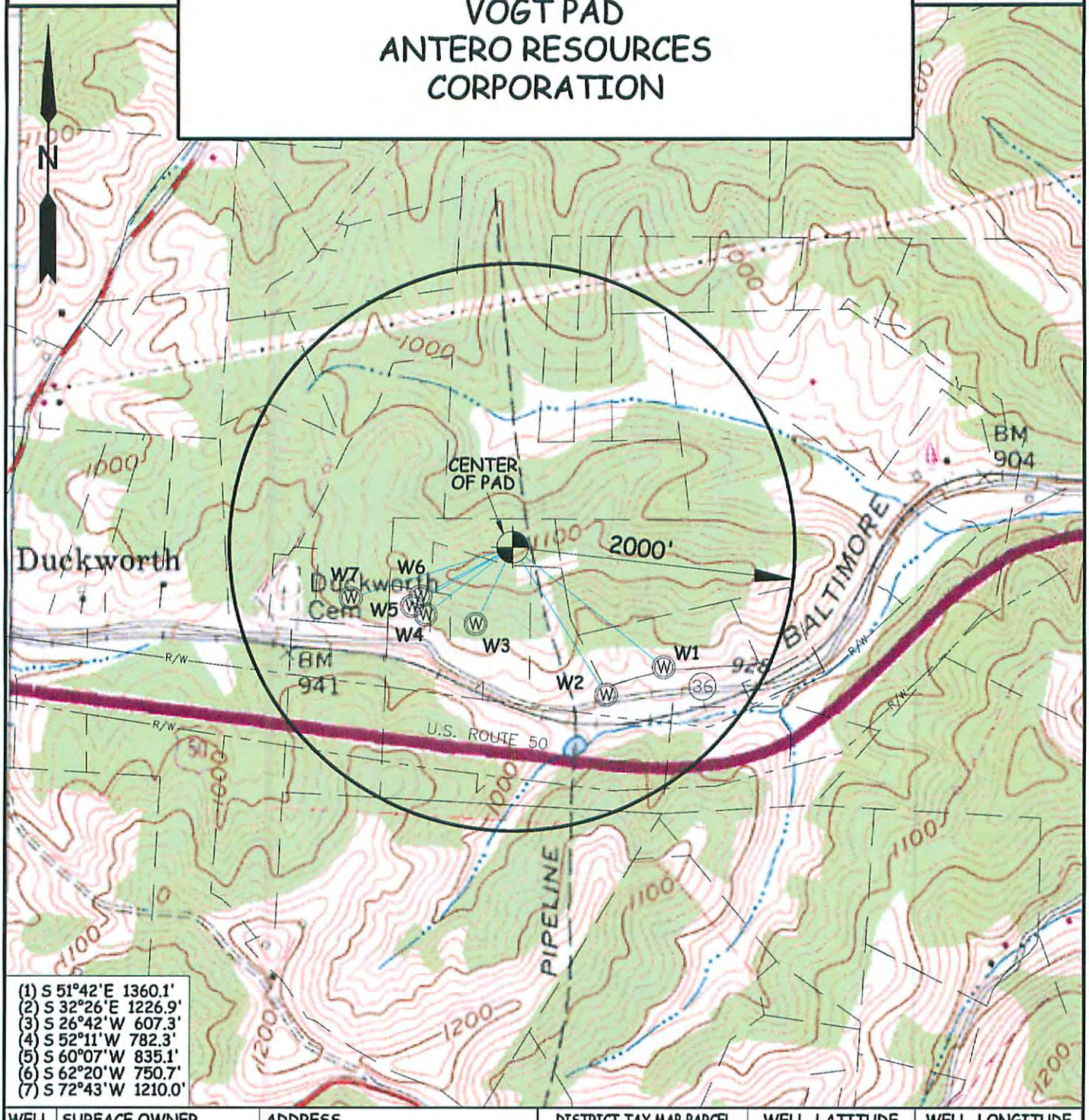
RECEIVED
Office of Oil and Gas
NOV 24 2015
WV Department of
Environmental Protection

17-0666 (Mod)

FORM WW-9

PAGE OF

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

DATE: 11/16/15

DRAWN BY: D.R.R.

FILE: VOGTWATERMAPR

SCALE : 1-INCH = 1000-FEET

0' 1000' 2000' 3000'

RECEIVED
Office of Oil & Gas
NOV 24
WV Department of Environmental Protection

17 - 06666 Cokep

WW-6A5
(1/12)

Operator Well No. McGill Unit 2H

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

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)

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND 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
Greenwoood, WV 26415

Name: Steven W. & Vicky L. Kelley
Address: 328 Kelley Mountain Road
Greenwoood, 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: West Virginia
County: Doddridge
District: Central
Quadrangle: West Union 7.5'
Watershed: Tributary of Wilhelm Run

UTM NAD 83 Easting: 511887m
Northing: 4347565m
Public Road Access: CR 36
Generally used farm name: Vogt, Gregory R. & Carolyn S.

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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
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Environmental

WW-6AW
(1-12)

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

API NO. 47- 017 - 06666 WeD
OPERATOR WELL NO. McGill 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

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:	West Virginia	UTM NAD 83 Easting:	511887m
County:	Doddridge	Northing:	4347565m
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.

*Please check the box that applies

- ☐ SURFACE OWNER
- ☐ SURFACE OWNER (Road and/or Other Disturbance)
- ☐ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☐ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON

Signature: _____
Print Name: _____
Date: _____

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

FOR EXECUTION BY A CORPORATION, ETC.
Company: _____
By: _____
Its: _____
Signature: _____
Date: _____

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.

WW-6AW
(1-12)

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

API NO. 47- 017 - 06666 MOD
OPERATOR WELL NO. McGill 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

Instructions to Persons Named on Page WW-6A
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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:	West Virginia	UTM NAD 83 Easting:	511887m
County:	Doddridge	Northing:	4347565m
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.

*Please check the box that applies

- ☐ SURFACE OWNER
- ☐ SURFACE OWNER (Road and/or Other Disturbance)
- ☐ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☐ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON

Signature: Gregory R. Vogt
Print Name: Gregory R. Vogt
Date: 11-11-15

FOR EXECUTION BY A CORPORATION, ETC.

Company: _____
By: _____
Its: _____

Signature: _____
Date: _____

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WW-6AW
(1-12)

API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

API NO. 47- 017 - 06666 MOD
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

NOV 9 4 2015

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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County:	Doddridge	Northing:	4347565m
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.

*Please check the box that applies

- ☐ SURFACE OWNER
- ☐ SURFACE OWNER (Road and/or Other Disturbance)
- ☐ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☐ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON
Signature: _____
Print Name: Steven W Kelley
Date: 11-12-15

FOR EXECUTION BY A CORPORATION, ETC.
Company: _____
By: _____
Its: _____
Signature: _____
Date: _____

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.

WW-6AW (1-12) API# 47-017-06666 SHL & PAD DESIGN MODIFICATION

API NO. 47- 017 - 06666 MOD
OPERATOR WELL NO. McGill Unit 2H
Well Pad Name: Existing Vogt Pad

NOV 24 2015

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
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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:

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County:	Doddridge	Northing:	4347565m
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.

*Please check the box that applies	FOR EXECUTION BY A NATURAL PERSON
☐ SURFACE OWNER	Signature: Troy Cunningham
☐ SURFACE OWNER (Road and/or Other Disturbance)	Print Name: Troy Cunningham
☐ SURFACE OWNER (Impoundments/Pits)	Date: 11/16/15
☐ COAL OWNER OR LESSEE	**FOR EXECUTION BY A CORPORATION, ETC.**
☐ COAL OPERATOR	Company: _____
☐ WATER PURVEYOR	By: _____
☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD	Its: _____
	Signature: _____
	Date: _____

Oil and Gas Privacy Notice:
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AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

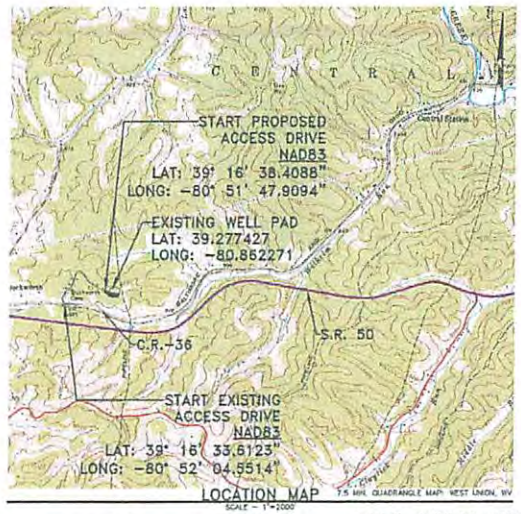
FOR

VOGT WELL PAD EXTENSION

CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

APPROVED
WVDEP OOG
Modification
1/12/2016

LOCATION MAP
SCALE – 1"=200,000'



LOCATION MAP
SCALE – 1"=2000'
7.5 MIN. QUADRANGLE MAP: WEST UNION, WV

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 WORKED DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

SOILS CLASSIFICATION

GpE: GILPIN-PEABODY COMPLEX, 25 TO 35 PERCENT SLOPES
GpD: GILPIN-UPSHUR SILT LOAMS, 8 TO 15 PERCENT SLOPES
GuD: GILPIN-UPSHUR SILT LOAMS, 15 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

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 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 NOTIFYING MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
5. A WETLANDS PRESENCE/ABSENCE SURVEY WAS PERFORMED BY POTESTA & ASSOCIATES, INC.
6. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES 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 RETTEW 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.

- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM OCCUPIED DWELLING OR BARN GREATER THAN 2,500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD.
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR.
- 300' FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TROUT STREAM.
- 1,000' OF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

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

CENTRAL DISTRICT - DODDRIDGE COUNTY

OWNER	TM/PARCEL	DEED/PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE
JERRY NORMAN, et al	P/O	304 / 370	18.60	ACCESS ROAD A	0.10
	TM 9 - Pcl. 19				
				TOTAL	0.10
ANNABELL J. RIFFLE	P/O	250 / 176	28.40	ACCESS ROAD A	2.88
	TM 9 - Pcl 41			FRAC PIT	1.09
				TOTAL	3.89
GREGORY R. VOGT, et ux	TM 9 - Pcl 18	248 / 488	100.82	ACCESS ROAD A	0.89
				FRAC PIT	2.50
				DRILL PAD	3.38
				PAD EXPANSION	0.14
				TOTAL	6.93
Steven W. Kelley, et ux	TM 9 - Pcl 18.3	238 / 523	18.107	PAD EXPANSION	0.80
				TOTAL	0.80
				GRAND TOTAL	11.37

LOCAL ANTERO OFFICE

175 ELK CREEK ROAD
MT. CLARE, WV 26408
PHONE (304) 822-3842

535 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330

LOCAL CONTACTS:
ELI WAGONER–ENVIRONMENTAL ENGINEER
PHONE (304) 822–3842 EXT. 311
CELL: (304) 476–9770

JOHN KARGAN–OPERATIONS SUPERINTENDENT
CELL: (817) 308–1553

AARON KUHZLER–CONSTRUCTION SUPERVISOR
CELL: (405) 227–8344

ANTHONY SMITH–FIELD ENGINEER
PHONE (304) 869–3405
CELL: (304) 873–5199

ROBERT WIRS–DESIGN MANAGER
PHONE (304) 842–4100
CELL: (304) 627–7405

DIRECTIONS TO THE SITE

FROM FEDERALSBURG, WV, TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT ONTO SUNNYSIDE ROAD AND TRAVEL 0.3 MILES. TURN RIGHT ONTO DUCKWORTH ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO STAY ON DUCKWORTH ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTO COOPER'S RIDGE ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOD (AC)	
ROAD A (2,641 FEET)	3.48
DRILL PAD	3.38
FRAC PIT	3.58
PAD EXPANSION	1.00
TOTAL AFFECTED AREA	11.43
TOTAL WOODED ACRES DISTURBED	8.96
TOTAL LINEAR FEET OF ACCESS ROAD	2,641

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)				
Well Name	Northing (NAD83) (ft)	Easting (NAD83) (ft)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,199.224	482,459.915	N039.27743229	W080.86230557
Drilled Well Seaborn Unit 2H	87,197.398	482,468.878	N039.27741712	W080.86230144
Drilled Well Seaborn Unit 2H	87,186.788	482,471.664	N039.27741208	W080.86218671
Drilled Well Violet Unit 1H	87,198.007	482,465.891	N039.27742222	W080.86237814
Permitted Well Duckbill Unit 1H	87,192.633	482,461.686	N039.27737326	W080.86228393
Permitted Well Duckbill Unit 2H	87,192.027	482,484.674	N039.27736819	W080.86324930
Permitted Well Maple Unit 1H	87,199.832	482,456.931	N039.27743743	W080.86234029
Permitted Well McGill Unit 1H	87,191.423	482,467.661	N039.27736318	W080.86221447
Permitted Well McGill Unit 2H	87,190.815	482,470.648	N039.27735809	W080.86217975
Permitted Well Tulip Unit 1H	87,198.616	482,463.005	N039.27742730	W080.86227065

WELLHEAD COORDINATES (NAD 27)				
Well Name	Northing (NAD27) (ft)	Easting (NAD27) (ft)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,166.648	482,043.194	N039.27735032	W080.86247679
Drilled Well Seaborn Unit 1H	87,196.820	482,052.152	N039.27733508	W080.86237266
Drilled Well Seaborn Unit 2H	87,188.212	482,055.140	N039.27733002	W080.86233783
Drilled Well Violet Unit 1H	87,187.431	482,049.167	N039.27734018	W080.86240725
Permitted Well Duckbill Unit 1H	87,182.059	482,044.961	N039.27729122	W080.86345815
Permitted Well Duckbill Unit 2H	87,181.451	482,047.949	N039.27728615	W080.86242042
Permitted Well Maple Unit 1H	87,189.256	482,040.207	N039.27733528	W050.82851151
Permitted Well McGill Unit 1H	87,180.847	482,050.937	N039.27726112	W080.86238569
Permitted Well McGill Unit 2H	87,180.238	482,053.923	N039.27727605	W080.86238097
Permitted Well Tulip Unit 1H	87,188.040	482,046.180	N039.27734526	W080.86244207

RETTEW
RETTEW Associates, Inc.
Fifth Third Center, 4705 Duke Drive, Suite 201
Mason, OH 45040
Phone (513) 445-1291 Fax (513) 445-1253
Email: rettew@rettew.com
Website: www.rettew.com

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FOR RETTEW ASSOCIATES BY:
ANDREW LEVINE, PE
No. 19074
STATE OF WEST VIRGINIA

MANAGER: ANDREW LEVINE, PE	DESIGN BY: MDD	CHKD BY: MDD	PROJECT NO.
	DRAWN BY: JMS	SURV. CHIEF: N/A	

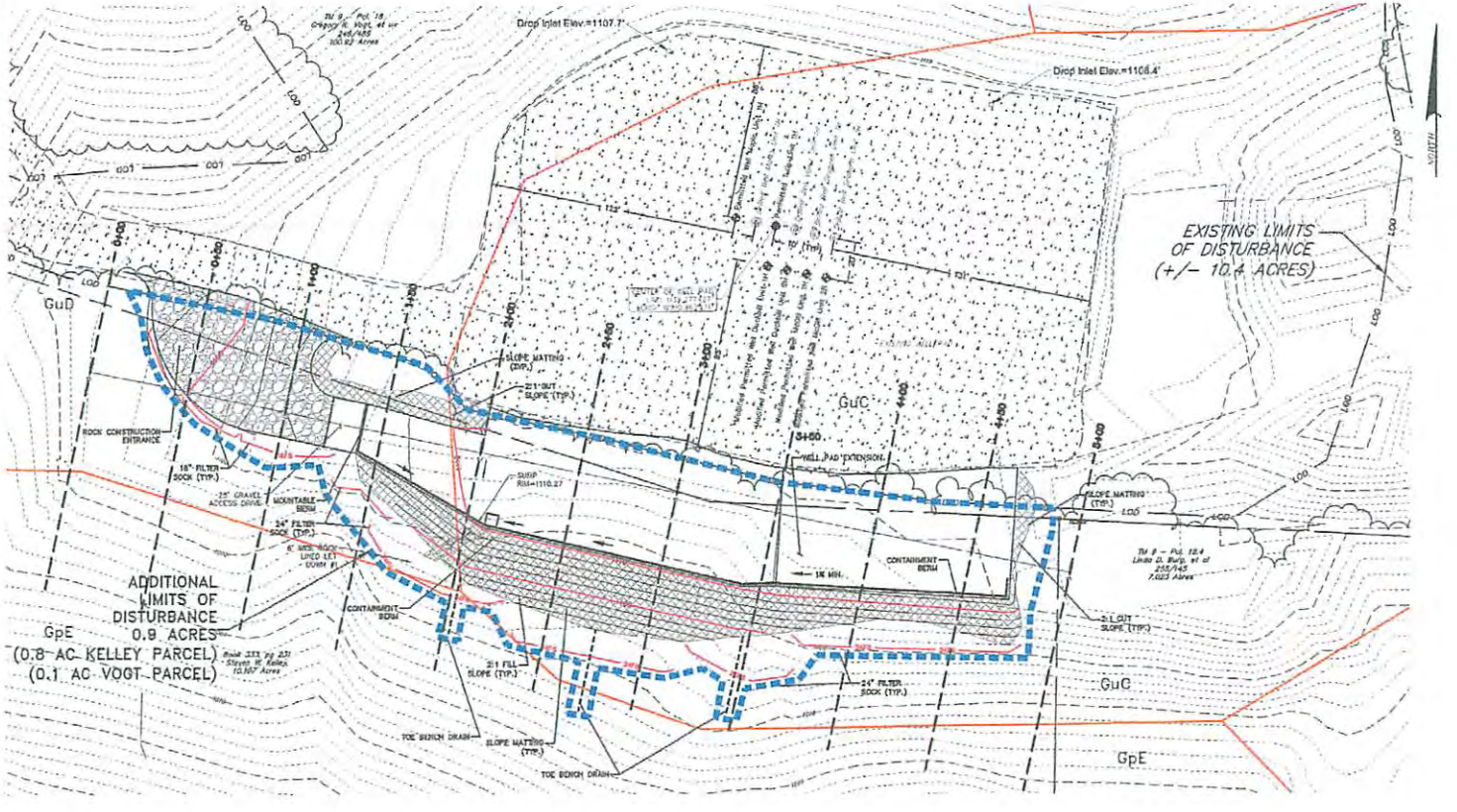
NO.	DATE	REVISION
		AS NOTED

CLIENT: Antero

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

DATE: 06/09/2015
SHEET NO. 1 OF 10
DWG. NO. 095452082

NOT FOR CONSTRUCTION/NOT FOR BIDDING



LEGEND

EXISTING PROPERTY LINE
EXISTING PAVEMENT
EXISTING STONE
EXISTING SOIL'S BOUNDARY
EXISTING TREELINE
EXISTING TREE
EXISTING MAJOR CONTOUR LINE
EXISTING MINOR CONTOUR LINE
EXISTING UTILITY POLE
EXISTING OVERHEAD ELECTRIC LINE
EXISTING UNDERGROUND ELECTRIC LINE
EXISTING GAS LINE
EXISTING SANITARY SEWER LINE
EXISTING FENCE LINE
EXISTING DRAINAGE PATH
EXISTING STREAM-EPHEMERAL
EXISTING STREAM-INTERMITTENT
EXISTING STREAM-PERENNIAL
EXISTING LIMITS OF DISTURBANCE
EXISTING AREA OF INTEREST
EXISTING WETLAND
COUNTY LINE
DISTRICT LINE
PROPOSED MAJOR CONTOUR LINE
PROPOSED MINOR CONTOUR LINE
PROPOSED TREELINE
PROPOSED GRAVEL
PROPOSED STORM PIPE
LIMITS OF DISTURBANCE

APPROVED
WVDEP OOG
Modification
1/12/2016

EXISTING LIMITS OF DISTURBANCE:
10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
11.4 ACRES

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)				
Well Name	Northing (NAD83) (N)	Easting (NAD83) (N)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,169.224	482,459.918	N039.27743256	W080.66230557
Drilled Well Seaborn Unit 1H	87,197.396	482,468.878	N039.27741712	W080.66222144
Drilled Well Seaborn Unit 2H	87,195.788	482,471.864	N039.27741200	W080.66218471
Drilled Well Violet Unit 1H	87,188.007	482,465.886	N039.27742222	W080.66227814
Permitted Well Duckbill Unit 1H	87,192.635	482,461.656	N039.27737328	W080.66228393
Permitted Well Duckbill Unit 2H	87,192.027	482,464.874	N039.27736819	W080.66224520
Permitted Well Maple Unit 1H	87,189.832	482,458.851	N039.27743743	W080.66234029
Permitted Well McGill Unit 1H	87,191.423	482,467.551	N039.27736316	W080.66221447
Permitted Well McGill Unit 2H	87,190.815	482,470.648	N039.27735809	W080.66217975
Permitted Well Tulip Unit 1H	87,198.618	482,462.905	N039.27742730	W080.66227055

WELLHEAD COORDINATES (NAD 27)				
Well Name	Northing (NAD27) (N)	Easting (NAD27) (N)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,188.848	492,043.194	N039.27735032	W080.66247679
Drilled Well Seaborn Unit 1H	87,186.820	492,052.152	N039.27733508	W080.66237256
Drilled Well Seaborn Unit 2H	87,186.212	492,055.140	N039.27733002	W080.66233793
Drilled Well Violet Unit 1H	87,187.431	492,049.167	N039.27734018	W080.66240735
Permitted Well Duckbill Unit 1H	87,182.059	492,044.961	N039.27729122	W080.66245516
Permitted Well Duckbill Unit 2H	87,181.451	492,047.948	N039.27728615	W080.66242042
Permitted Well Maple Unit 1H	87,189.256	492,040.207	N039.27735539	W080.66251151
Permitted Well McGill Unit 1H	87,180.847	492,050.937	N039.27728112	W080.66238569
Permitted Well McGill Unit 2H	87,180.239	492,053.923	N039.27727605	W080.66235097
Permitted Well Tulip Unit 1H	87,188.040	492,048.180	N039.27734528	W080.66244207

Well Name	API #
Drilled Well Marks Unit 1H	# 47-017-06286-00
Drilled Well Seaborn Unit 1H	# 47-017-06169-00
Drilled Well Seaborn Unit 2H	# 47-017-06170-00
Drilled Well Violet Unit 1H	# 47-017-06206-00
Permitted Well Duckbill Unit 1H	# 47-017-06667-00
Permitted Well Duckbill Unit 2H	# 47-017-06668-00
Permitted Well Maple Unit 1H	# 47-017-06580-00
Permitted Well McGill Unit 1H	# 47-017-06665-00
Permitted Well McGill Unit 2H	# 47-017-06666-00
Permitted Well Tulip Unit 1H	# 47-017-06236-00

Cut & Fill (Pad Extension Area)			
Cut (yds)		+	729
Stone-	Depth (in)-12	+	918
Fill (yds)		-	4,096
Compaction-	10%	-	73
Topsoil Strip-	Area (acre)=0.78	Depth (in)=8	- 842
Topsoil Replacement-	Area (acre)=0.21	Depth (in)=8	+ 230
Net (yds)-	Borrow		-3,134
Topsoil Net (yds)-	Excess		612

NOT FOR CONSTRUCTION/NOT FOR BIDDING

REVISION | DATE | NO.

SCALE 1"=30'

FOR RETTEW ASSOCIATES BY: JASON LEGRO, PE

MANAGER: JASON LEGRO, PE | DRAWN BY: MDD | CHKD BY: MDD
DESIGN BY: JMS | DRAWN BY: MDD | CHKD BY: MDD
SURV. CHIEF: | FIELDBOOK NO.: N/A

CLIENT: Antero Resources

RETTEW
RETTEW Associates, Inc.
Engineers ■ Surveyors ■ Scientists
Pittsburgh, PA 15205
Phone: (412) 446-1218 Fax: (412) 446-1733
Email: info@rettew.com
Website: www.rettew.com

EROSION AND SEDIMENT CONTROL PLAN
CONSTRUCTION DRAWINGS
FOR
VOGT
WELL PAD EXTENSION
CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 06/09/2015
SHEET NO. 3 OF 10
DWG. NO. 095452082

17-0446 MOD

AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR

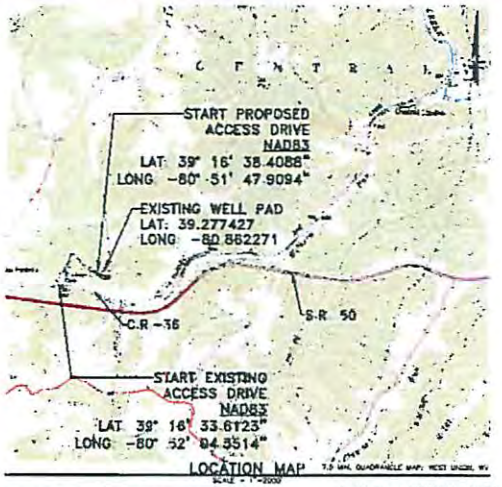
VOGT WELL PAD EXTENSION

CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

Troy Cunningham 11/16/15

RECEIVED
Office of Oil and Gas
NOV 20 2015
WV Department of Environmental Protection

LOCATION MAP
SCALE - 1" = 300,000'



LOCATION MAP
SCALE - 1" = 2000'
7.5 MIN. QUADRANGLE MAP: WEST UNION, WV

WEST VIRGINIA 811
CALL BEFORE YOU DIG! Dial 811 or 800.245.4848

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING SATURDAYS AND HOLIDAYS), PRIOR TO ITS STARTING ANY EARTH DISTURBANCE (BLASTING ALL EXCAVATIONS WHETHER OR NOT ACTIVITIES SHALL CONTACT WEST VIRGINIA 811 OR 1-800-245-4848.

SOILS CLASSIFICATION

GuC: GILPIN-PEABODY COMPLEX, 25 TO 35 PERCENT SLOPES
GuD: GILPIN-UPSHUR SILT LOAMS, 8 TO 15 PERCENT SLOPES
GuE: GILPIN-UPSHUR SILT LOAMS, 15 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

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 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 NOTIFYING WEST VIRGINIA 811 AT 1-800-245-4848.
5. A WETLANDS PRESENCE/ABSENCE SURVEY WAS PERFORMED BY PETRUTA & ASSOCIATES, INC.
6. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES 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 BETTER 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.

- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM OCCUPIED DWELLING OR BARN GREATER THAN 2,500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD.
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 300' FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TROUT STREAM.
- 1,000' OF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

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

CENTRAL DISTRICT - DODDRIDGE COUNTY

OWNER	TAX PARCEL	DEED/PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE
JERRY MORMAN et al	P/O	294/320	18.50	ACCESS ROAD A	0.10
	TM 9 - Pcl 19				
				TOTAL	6.10
ANNABELL J. REYLE	P/O	250/159	23.10	ACCESS ROAD A	2.58
	TM 9 - Pcl 41			FRAC PIT	1.09
				TOTAL	3.66
GREGORY R. VOGT, et ux	TM 9 - Pcl 18	268/489	100.80	ACCESS ROAD A	0.80
				FRAC PIT	3.50
				DRILL PAD	3.38
				PAD EXPANSION	0.14
				TOTAL	6.82
Steven W. Kelley, et ux	TM 9 - Pcl 18.3	250/523	19.197	PAD EXPANSION	0.80
				TOTAL	0.80
				GRAND TOTAL	11.32

LOCAL ANTERO OFFICE

479 ELK CREEK ROAD | 333 WHITE OAKS BLVD
MT. CLARE, WV 26408 | BRIDGEPORT, WV 26330
PHONE (304) 622-3842

LOCAL CONTACTS:
ELI MACKEREY-ENVIRONMENTAL ENGINEER
PHONE (304) 622-3842 EXT. 291
CELL: (304) 476-9770

JOHN KANCAL-OPERATIONS SUPERINTENDENT
CELL: (817) 269-1183

AARON KUNZLER-CONSTRUCTION SUPERVISOR
CELL: (405) 227-8244

ANTHONY BATH-FIELD ENGINEER
PHONE (304) 869-3420
CELL: (304) 873-5198

ROBERT WIMER-DESIGN MANAGER
PHONE (304) 842-4100
CELL: (304) 627-7405

DIRECTIONS TO THE SITE

FROM PENNSBORO, WV, TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.9 MILES. TURN LEFT ONTO SUNNYSIDE ROAD AND TRAVEL 0.3 MILES. TURN RIGHT ONTO DUCKWORTH ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO STAY ON DUCKWORTH ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTO COOPER'S RIDGE ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOD (AC)	
ROAD A (EXISTING)	2.48
DRILL PAD	3.38
FRAC PIT	3.50
PAD EXPANSION	1.80
TOTAL AFFECTED AREA	11.42
TOTAL WOODED ACRES DISTURBED	3.40
TOTAL LINEAR FEET OF ACCESS ROAD	2,349

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)				
Well Name	Northing (NAD83) (ft)	Easting (NAD83) (ft)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Morris Unit 1H	67,188,234	482,436,818	N39.27743836	W080.86220057
Drilled Well Smithern Unit 1H	67,187,396	482,466,879	N39.27741712	W080.86220144
Drilled Well Smithern Unit 2H	67,195,788	482,471,864	N39.27741886	W080.86218691
Drilled Well Vogt Unit 1H	67,198,207	482,483,884	N39.27742232	W080.86223614
Permitted Well Duckett Unit 1H	67,192,836	482,481,885	N39.27737289	W080.86220182
Permitted Well Duckett Unit 2H	67,192,027	482,464,874	N39.27736819	W080.86234870
Permitted Well Maple Unit 1H	67,199,832	482,456,934	N39.27743743	W080.86234079
Permitted Well Smith Unit 1H	67,191,423	482,467,861	N39.27736396	W080.86225441
Permitted Well Smith Unit 2H	67,190,615	482,470,548	N39.27735809	W080.86217975
Permitted Well Tulip Unit 1H	67,186,816	482,462,965	N39.27732730	W080.86227055

WELLHEAD COORDINATES (NAD 27)				
Well Name	Northing (NAD27) (ft)	Easting (NAD27) (ft)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Morris Unit 1H	67,188,648	482,043,884	N39.27732032	W080.86247674
Drilled Well Smithern Unit 1H	67,188,820	482,082,152	N39.27733508	W080.86237206
Drilled Well Smithern Unit 2H	67,196,213	482,086,140	N39.27733809	W080.86233783
Drilled Well Vogt Unit 1H	67,183,431	482,049,167	N39.27734018	W080.86240732
Permitted Well Duckett Unit 1H	67,182,059	482,044,961	N39.27729122	W080.86248518
Permitted Well Duckett Unit 2H	67,191,451	482,047,949	N39.27728615	W080.86242042
Permitted Well Maple Unit 1H	67,188,236	482,040,297	N39.27733639	W080.86251158
Permitted Well Smith Unit 1H	67,180,847	482,050,837	N39.27728112	W080.86238589
Permitted Well Smith Unit 2H	67,180,238	482,053,523	N39.27727550	W080.86235087
Permitted Well Tulip Unit 1H	67,188,840	482,046,160	N39.27734029	W080.86244287

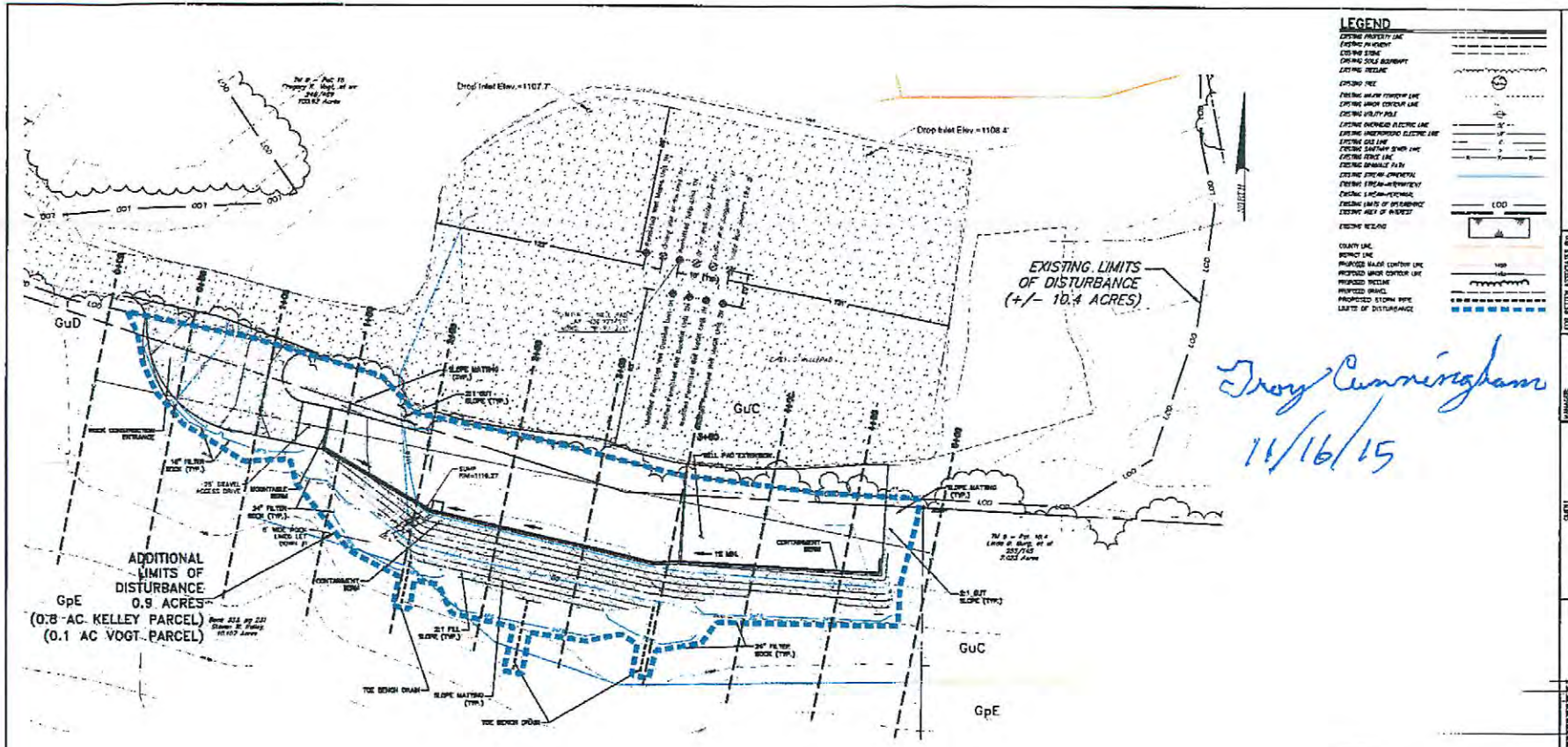
Antero

RPT TEW

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

DATE: 06/09/2015
SHEET NO. 1 OF 10
DWG. NO. 093452082

NOT FOR CONSTRUCTION/NOT FOR BIDDING



EXISTING AND PROPOSED WELL COORDINATES

Well Name	Northing (NAD83) (ft)	Easting (NAD83) (ft)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	57,199.224	482,458.948	N039.27743236	W080.86230537
Drilled Well Seaborn Unit 1H	57,197.326	482,468.676	N039.27741712	W080.86220144
Drilled Well Seaborn Unit 2H	57,195.738	482,471.584	N039.27741206	W080.86216671
Drilled Well Violet Unit 1H	57,195.037	482,495.091	N039.27743223	W080.86223814
Permitted Well Dunkirk Unit 1H	57,192.675	482,943.695	N039.27737316	W080.86276763
Permitted Well Dunkirk Unit 2H	57,192.027	482,464.674	N039.27736818	W080.86224930
Permitted Well Maple Unit 1H	57,189.832	482,486.323	N039.27743743	W080.86234024
Permitted Well McGill Unit 1H	57,191.473	482,487.681	N039.27736316	W080.86221443
Permitted Well McGill Unit 2H	57,193.815	482,470.848	N039.27735809	W080.86212875
Permitted Well Tulip Unit 1H	57,195.616	482,462.805	N039.27742730	W080.86227089

Well Name	Northing (NAD27) (ft)	Easting (NAD27) (ft)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	57,198.848	482,043.184	N039.27729032	W080.86247679
Drilled Well Seaborn Unit 1H	57,196.820	482,052.952	N039.27723508	W080.86237268
Drilled Well Seaborn Unit 2H	57,195.212	482,055.145	N039.27723002	W080.86233793
Drilled Well Violet Unit 1H	57,187.431	482,049.167	N039.27724918	W080.86240735
Permitted Well Dunkirk Unit 1H	57,192.058	482,044.941	N039.27724122	W080.86245515
Permitted Well Dunkirk Unit 2H	57,191.451	482,047.848	N039.27726615	W080.86242943
Permitted Well Maple Unit 1H	57,189.254	482,068.327	N039.27729539	W080.86265151
Permitted Well McGill Unit 1H	57,190.847	482,050.937	N039.27728912	W080.86238368
Permitted Well McGill Unit 2H	57,193.239	482,053.923	N039.27727829	W080.86223097
Permitted Well Tulip Unit 1H	57,195.040	482,045.180	N039.27734526	W080.86244207

Well Name	API #
Drilled Well Marks Unit 1H	# 47-017-06256-00
Drilled Well Seaborn Unit 1H	# 47-017-06184-00
Drilled Well Seaborn Unit 2H	# 47-017-06170-00
Drilled Well Violet Unit 1H	# 47-017-06209-00
Permitted Well Dunkirk Unit 1H	# 47-017-06867-00
Permitted Well Dunkirk Unit 2H	# 47-017-06895-00
Permitted Well Maple Unit 1H	# 47-017-06550-00
Permitted Well McGill Unit 1H	# 47-017-06665-00
Permitted Well McGill Unit 2H	# 47-017-06866-00
Permitted Tulip Unit 1H	# 47-017-06238-00

EXISTING LIMITS OF DISTURBANCE:
10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
11.4 ACRES

Cut & Fill (Pad Extension Area)			
Cut (yds)		+	725
Stone -		+	3700
Fill (yds)		-	4,000
Compaction	30%	-	75
Topsoil Strip	Area (acre)=0.78	Depth (in)=6	760
Topsoil Replacement	Area (acre)=0.21	Depth (in)=6	225
Net Cut/fill	Borrow		-3,314
Topsoil Net (yds)-	Excess		610

NOT FOR CONSTRUCTION/NOT FOR BIDDING

EROSION AND SEDIMENT CONTROL PLAN
CONSTRUCTION DRAWINGS
FOR
VOGT
WELL PAD EXTENSION
CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 06/09/2015
SHEET NO. 3 OF 10
DNC WO 025452082

17-0866 VOG

Received
Office of Oil & Gas
NOV 17 2015
WV Department of
Environmental Protection

17-0664 (mod)

AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR

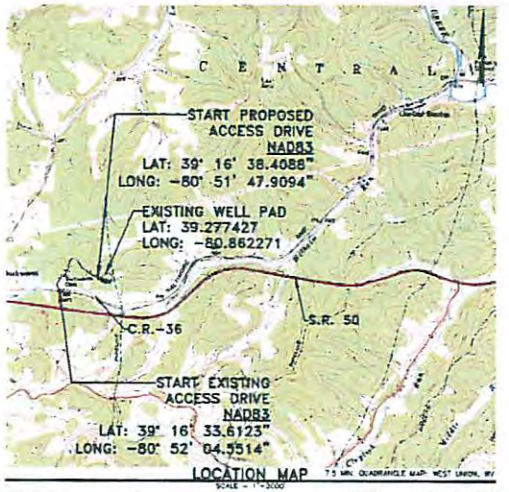
VOGT WELL PAD EXTENSION

CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

Brian O'Hara 11-19-15

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

LOCATION MAP
SCALE - 1"=200,000'



LOCATION MAP
SCALE - 1"=2000'
7.5 MIN. QUADRANGLE MAP: WEST UNION, WV

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

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

SOILS CLASSIFICATION

GpE: GILPIN-PEABODY COMPLEX, 25 TO 35 PERCENT SLOPES
GuC: GILPIN-UPSHUR SILT LOAMS, 8 TO 15 PERCENT SLOPES
GuE: GILPIN-UPSHUR SILT LOAMS, 15 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

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 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 NOTIFYING MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
5. A WETLANDS PRESENCE/ABSENCE SURVEY WAS PERFORMED BY POTESTA & ASSOCIATES, INC.
6. 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 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 RETTEW 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:

- 200' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM OCCUPIED DWELLING OR BARN GREATER THAN 2,500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 300' FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TROUT STREAM
- 1,000' OF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

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

CENTRAL DISTRICT - DODDRIDGE COUNTY

OWNER	TAX PARCEL	DEED/PGS	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE
JERRY NORMAN, et al	P/O	294/370	13.50	ACCESS ROAD A	0.10
	TM 8 - Pcl. 16				
				TOTAL	6.18
ANNABELL J. RIFFLE	P/O	260/178	35.45	ACCESS ROAD A	2.56
	TM 6 - Pcl 41			FRAC PIT	1.09
				TOTAL	3.65
GREGORY R. VOGT, et ux	TM 8 - Pcl 14	248/489	180.52	ACCESS ROAD A	0.80
				FRAC PIT	2.50
				DRILL PAD	3.38
				PAD EXPANSION	0.14
				TOTAL	6.82
Steven W. Kelley, et ux	TM 8 - Pcl 14.3	236/525	15.107	PAD EXPANSION	0.89
				TOTAL	0.89
				GRAND TOTAL	11.27

LOCAL ANTERO OFFICE

175 ELK CREEK ROAD | 535 WHITE OAKS BLVD.
JANE LEW, WV 26378 | BRIDGEPORT, WV 26330
PHONE (304) 622-3842

LOCAL CONTACTS:
CJ WAGNER-ENVIRONMENTAL ENGINEER
PHONE (304) 522-3842 EXT. 311
CELL: (304) 476-9770

JOHN KAMCHI-OPERATIONS SUPERINTENDENT
CELL: (877) 588-1953

AARON KUHLER-CONSTRUCTION SUPERVISOR
CELL: (405) 227-9344

ANTHONY SMITH-FIELD ENGINEER
PHONE (304) 869-3405
CELL: (304) 673-8198

ROBERT WIMER-DESIGN MANAGER
PHONE (304) 842-4100
CELL: (304) 627-7405

DIRECTIONS TO THE SITE

FROM PENNSBORO, WV: TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT ONTO SUNNYSIDE ROAD AND TRAVEL 0.1 MILES. TURN RIGHT ONTO DUCKWORTH ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO STAY ON DUCKWORTH ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTO COOPER'S RIDGE ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOD (AC)	
ROAD A (7,617 FEET):	3.46
DRILL PAD	3.38
FRAC PIT	3.59
PAD EXPANSION	1.00
TOTAL AFFECTED AREA	11.43
TOTAL INVOLVED ACRES DISTURBED	8.98
TOTAL LINEAR FEET OF ACCESS ROAD	2,541'

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)				
Well Name	Northing (NAD83) (ft)	Easting (NAD83) (ft)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,199.234	482,456.915	N039.27743236	W080.86230557
Drilled Well Seaborn Unit 1H	87,197.366	482,468.876	N039.27741712	W080.86230144
Drilled Well Seaborn Unit 2H	87,196.786	482,471.884	N039.27741208	W080.86216871
Drilled Well Violet Unit 1H	87,198.027	482,465.891	N039.27742227	W080.86233814
Permitted Well Dunbar Unit 1H	87,192.835	482,461.686	N039.27737325	W080.86220582
Permitted Well Duckbill Unit 2H	87,192.027	482,454.674	N039.27736819	W080.86224920
Permitted Well Maple Unit 1H	87,196.832	482,456.971	N039.27742743	W080.86234229
Permitted Well McGill Unit 1H	87,191.423	482,467.661	N039.27736316	W080.86221447
Permitted Well McGill Unit 2H	87,190.815	482,470.648	N039.27735809	W080.86217879
Permitted Well Tulip Unit 1H	87,198.816	482,462.903	N039.27742720	W080.86227085

WELLHEAD COORDINATES (NAD 27)				
Well Name	Northing (NAD27) (ft)	Easting (NAD27) (ft)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,168.648	482,043.194	N039.27735833	W080.86247879
Drilled Well Seaborn Unit 1H	87,166.823	482,052.152	N039.27733308	W080.86237258
Drilled Well Seaborn Unit 2H	87,166.212	482,055.140	N039.27733202	W080.86233793
Drilled Well Violet Unit 1H	87,167.431	482,049.167	N039.27734168	W080.86240728
Permitted Well Dunbar Unit 1H	87,162.029	482,044.961	N039.27729722	W080.86245515
Permitted Well Duckbill Unit 2H	87,161.451	482,047.946	N039.27728815	W080.86247042
Permitted Well Maple Unit 1H	87,159.256	482,049.207	N039.27735639	W080.82831151
Permitted Well McGill Unit 1H	87,160.847	482,050.837	N039.27725112	W080.86236569
Permitted Well McGill Unit 2H	87,160.238	482,053.823	N039.27727605	W080.86233087
Permitted Well Tulip Unit 1H	87,168.043	482,046.080	N039.27734526	W080.86244207

RETTEW
RETTEW Associates, Inc.
Lab Towne, 4565 Duckworth Pk, Ste 205
Phone (412) 446-1728 Fax (412) 446-1733
Email: rettew@rettew.com
Engineers • Surveyors • Planners • Landscape Architects
Construction Consultants

CLIENT: Antero

MANAGER: ANDREW LEVINE, PE
DESIGN BY: JMS
DRAWN BY: JMS
SURV. CHIEF: FIELDBOOK NO. 631
CHKD BY: MDD
CHKD BY: MDD

FOR RETTEW ASSOCIATES BY:
SEAL OF PROFESSIONAL ENGINEER

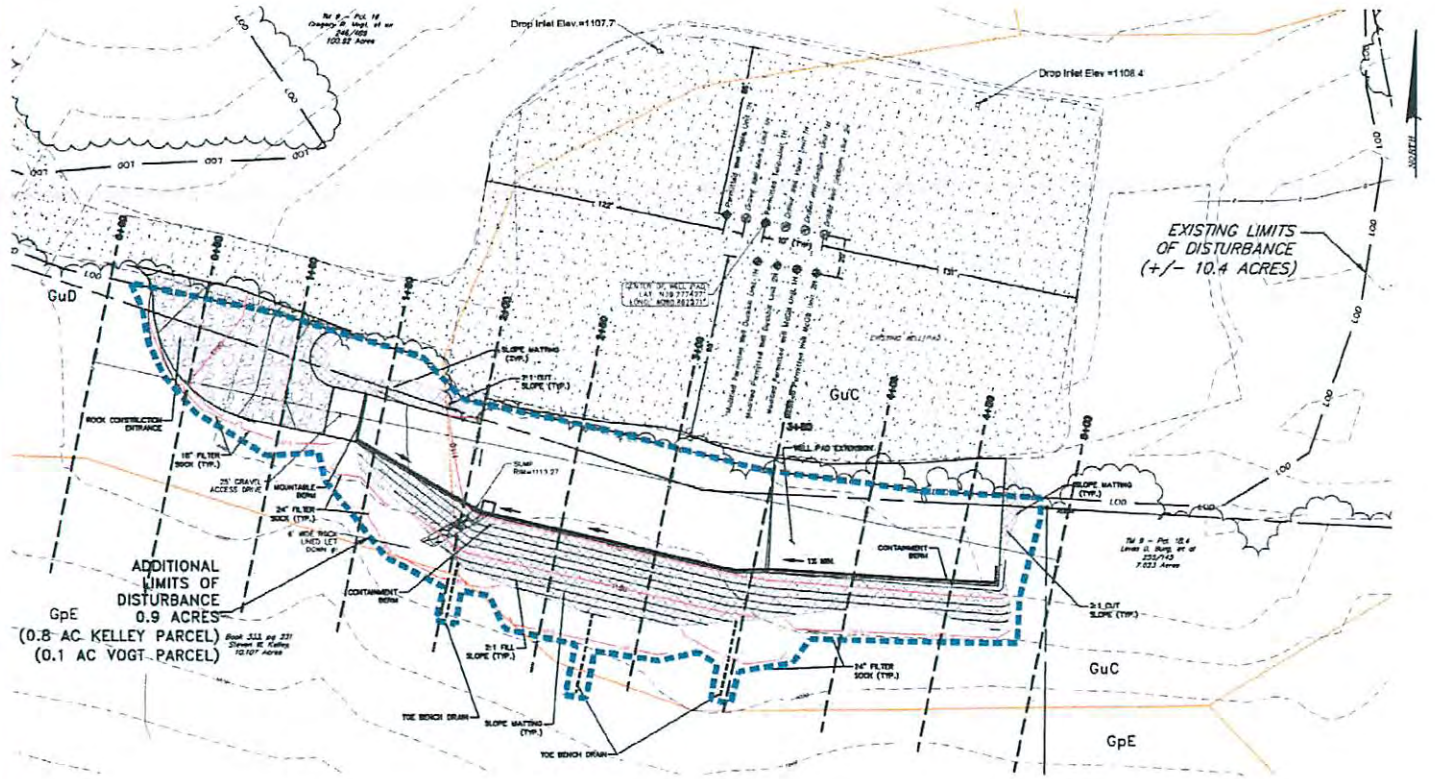
NO.	DATE	REVISION
		AS BUILT

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

DATE: 08/09/2015
SHEET NO. 1 OF 10
DWG. NO. 095452082

NOT FOR CONSTRUCTION/NOT FOR BIDDING

17-0666 WOP



LEGEND

EXISTING PROPERTY LINE
EXISTING PAVEMENT
EXISTING STONE
EXISTING STATE BOUNDARY
EXISTING PERENNIAL STREAM
EXISTING INTERMITTENT STREAM
EXISTING WETLAND
PROPOSED MAJOR CONTOUR LINE
PROPOSED MINOR CONTOUR LINE
PROPOSED PERENNIAL STREAM
PROPOSED INTERMITTENT STREAM
PROPOSED STORM PIPE
LIMITS OF DISTURBANCE

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

Bryan O'Hara
11-19-15

EXISTING LIMITS OF DISTURBANCE:
10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
11.4 ACRES

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (M)	Easting (NAD83) (M)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,199.224	482,499.918	N039.27743236	W080.86230857
Drilled Well Seaborn Unit 1H	87,197.385	482,468.576	N039.27741712	W080.86220144
Drilled Well Seaborn Unit 2H	87,196.788	482,471.864	N039.27741208	W080.86210871
Drilled Well Violet Unit 1H	87,198.007	482,485.891	N039.27742223	W080.86223614
Permitted Well Duckbill Unit 1H	87,193.635	482,441.686	N039.27737229	W080.86228383
Permitted Well Duckbill Unit 2H	87,192.027	482,464.574	N039.27738819	W080.86224920
Permitted Well Maple Unit 1H	87,199.632	482,456.531	N039.27743543	W080.86234026
Permitted Well McGill Unit 1H	87,191.423	482,467.841	N039.27736314	W080.86221447
Permitted Well McGill Unit 2H	87,190.615	482,470.648	N039.27735809	W080.86217975
Permitted Well Tulip Unit 1H	87,198.618	482,462.905	N039.27742730	W080.86227065

WELLHEAD COORDINATES (NAD 27)

Well Name	Northing (NAD27) (M)	Easting (NAD27) (M)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,188.948	482,043.194	N039.27735032	W080.86247679
Drilled Well Seaborn Unit 1H	87,186.529	482,052.152	N039.27733008	W080.86237366
Drilled Well Seaborn Unit 2H	87,186.212	482,055.140	N039.27733002	W080.86233783
Drilled Well Violet Unit 1H	87,187.431	482,069.167	N039.27734018	W080.86240735
Permitted Well Duckbill Unit 1H	87,182.059	482,044.951	N039.27728123	W080.86245515
Permitted Well Duckbill Unit 2H	87,181.451	482,047.946	N039.27728615	W080.86242042
Permitted Well Maple Unit 1H	87,189.256	482,040.707	N039.27735838	W080.86251154
Permitted Well McGill Unit 1H	87,180.547	482,050.537	N039.27728112	W080.86238589
Permitted Well McGill Unit 2H	87,180.238	482,053.823	N039.27727804	W080.86235097
Permitted Well Tulip Unit 1H	87,188.240	482,046.180	N039.27734526	W080.86244207

Well Name	API #
Drilled Well Marks Unit 1H	# 47-017-06268-00
Drilled well Seaborn Unit 1H	# 47-017-06185-00
Drilled Well Seaborn Unit 2H	# 47-017-06170-00
Drilled Well Violet Unit 1H	# 47-017-06196-00
Permitted Well Duckbill Unit 1H	# 47-017-06667-00
Permitted Well Duckbill Unit 2H	# 47-017-06668-00
Permitted Well Maple Unit 1H	# 47-017-06550-00
Permitted Well McGill Unit 1H	# 47-017-06665-00
Permitted Well McGill Unit 2H	# 47-017-06666-00
Permitted Tulip Unit 1H	# 47-017-06236-00

Cut & Fill (Pad Extension Area)

Cut (yds)		+	720
Stone-	Depth (in)=12	+	918
Fill (yds)			4,006
Compaction-	10%	-	75
Topsoil Strip-	Area (acre)=0.78 Depth (in)=6	-	842
Topsoil Replacement-	Area (acre)=0.21 Depth (in)=6	+	226
Net (yds)-	Borrow		-3,134
Topsoil Net (yds)-	Excess		633

NOT FOR CONSTRUCTION/NOT FOR BIDDING

EROSION AND SEDIMENT CONTROL PLAN
CONSTRUCTION DRAWINGS
FOR
VOGT
WELL PAD EXTENSION
CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 06/09/2015
SHEET NO. 3 OF 10
DWG NO. 095452082

REVISION | DATE | NO

FOR RETTEW ASSOCIATES BY:
JAMES A. AXIS
STATE OF WEST VIRGINIA
19076
REGISTERED PROFESSIONAL ENGINEER

MANAGER: ANDREW LEVINE, PE
DESIGN BY: AXS | CHKD BY: MDD
DRAWN BY: AXS | CHKD BY: MDD
SURV.: CHIEF/FIELDBOOK NO: N/A

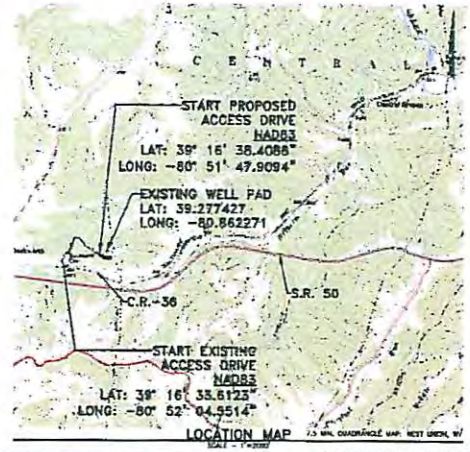
CLIENT: Antero

RETTEW
RETTEW Associates, Inc.
Main Towers, Suite 1100, Pittsburgh, PA 15222
Phone (412) 446-1728 Fax (412) 446-1733
Email: rettew@rettew.com
Website: www.rettew.com
Engineers | Surveyors | Planners | Landscape Architects
Pennsylvania | Maryland | West Virginia | Ohio | New York | Delaware | Virginia
Comprehensive Engineering

17-0666B HDD

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

LOCATION MAP
SCALE - 1"=200,000'



LOCATION MAP
SCALE - 1"=2000'
7.5 MIN. QUADRANGLE MAP: WEST UNION, WV

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

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 WVDOT PID 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 PLAN, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
4. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY NOTIFYING MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
5. A WETLANDS PRESENCE/ABSENCE SURVEY WAS PERFORMED BY POTESTA & ASSOCIATES, INC.
6. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES 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.
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WELL LOCATION RESTRICTIONS

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

- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM OCCUPIED DWELLING OR BARN GREATER THAN 2,500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 300' FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TROUT STREAM
- 1,000' OF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

WEST VIRGINIA 811
CALL BEFORE YOU DIG! Dial 811 or 800.245.4848
It's Utility of West Virginia

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO YOU SCHEDULE ANY EARTH DISTURBANCE, EXCAVATION, FILL OR CONSTRUCTION, YOU MUST CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

SOILS CLASSIFICATION

GeD: GLYN—PEABODY COMPLEX, 25 TO 35 PERCENT SLOPES
GeD: GLYN—UPSHUR SILT LOAMS, 8 TO 15 PERCENT SLOPES
GeD: GLYN—UPSHUR SILT LOAMS, 15 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 PENNSBORO, WV: TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT ONTO SURVYROCK ROAD AND TRAVEL 0.3 MILES. TURN RIGHT ONTO DUCKWORTH ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO STAY ON DUCKWORTH ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTO COOPER'S RIDGE ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

PROPERTY OWNER INFORMATION - VOGT PAD AS-BUILT AND PAD EXPANSION					
CENTRAL DISTRICT - DODDRIDGE COUNTY					
OWNER	TM/PARCEL	DEED/PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE
JERRY NORMAN, et al	PID	254 / 373	18.80	ACCESS ROAD A	0.10
	TM 9 - Par. 18				
				TOTAL	0.10
ANNABELL J. RATTLE	PID	252 / 179	27.40	ACCESS ROAD A	2.86
	TM 9 - Par 11			FRAC PIT	1.00
				TOTAL	3.86
GREGORY R. YOST, et ux	TM 9 - Par 19	240 / 466	100.00	ACCESS ROAD A	0.30
				FRAC PIT	2.00
				DRILL PAD	8.59
				PAD EXPANSION	0.14
				TOTAL	8.83
Steven W. Kelley, et ux	TM 9 - Par 19.3	266 / 529	95.07	PAD EXPANSION	0.90
				TOTAL	0.90
				GRAND TOTAL	14.27

LOCAL ANTERO OFFICE

172 ELK CREEK ROAD
JANE LEW, WV 26378
PHONE (304) 622-3842

LOCAL CONTACTS
DJ WAGNER—ENVIRONMENTAL ENGINEER
PHONE (304) 622-3842 EXT. 211
CELL: (304) 476-8770

JOHN KANCHI—OPERATIONS SUPERINTENDENT
CELL: (937) 368-1553

AARON KINCHELOE—CONSTRUCTION SUPERVISOR
CELL: (405) 227-6344

ANTHONY SMITH—FIELD ENGINEER
PHONE (304) 884-2428
CELL: (304) 673-6109

ROBERT WIRTS—DESIGN MANAGER
PHONE (304) 843-4105
CELL: (304) 627-7402

535 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330

AS-BUILT AND PAD EXPANSION LOD (AC)	
ROAD A (3,641 FEET)	3.40
DRILL PAD	8.59
FRAC PIT	5.00
PAD EXPANSION	1.00
TOTAL AFFECTED AREA	17.99
TOTAL WOODED/FREE DISTURBED	6.90
TOTAL LINEAR FEET OF ACCESS ROAD	2,641

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (M)	Easting (NAD83) (M)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,195,224	482,458,918	N39.27743538	W080.86230567
Drilled Well Seaborn Unit 1H	87,167,386	482,468,876	N39.27741713	W80.86220744
Drilled Well Seaborn Unit 2H	87,166,798	482,471,864	N39.27741596	W080.86216671
Drilled Well Mabel Unit 1H	87,196,007	482,465,891	N39.27743222	W80.86219814
Permitted Well Burdett Unit 1H	87,162,635	482,461,888	N39.27727276	W80.86223763
Permitted Well Burdett Unit 2H	87,163,027	482,464,874	N39.27728419	W080.86214830
Permitted Well Maple Unit 1H	87,169,832	482,456,831	N39.27743743	W080.86234029
Permitted Well Webb Unit 1H	87,197,423	482,457,881	N39.27751418	W080.86231647
Permitted Well Webb Unit 2H	87,198,015	482,479,848	N39.27752018	W080.86219178
Permitted Well Tally Unit 1H	87,198,613	482,462,803	N39.27754730	W080.86227065

WELLHEAD COORDINATES (NAD 27)

Well Name	Northing (NAD27) (M)	Easting (NAD27) (M)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Marks Unit 1H	87,188,845	482,043,184	N39.27726032	W080.86247679
Drilled Well Seaborn Unit 1H	87,160,930	482,053,158	N39.27713508	W080.86237866
Drilled Well Seaborn Unit 2H	87,160,212	482,056,142	N39.27713202	W080.86233783
Drilled Well Mabel Unit 1H	87,189,431	482,048,167	N39.27734018	W080.86240735
Permitted Well Burdett Unit 1H	87,155,059	482,044,161	N39.27728122	W080.86244765
Permitted Well Burdett Unit 2H	87,156,451	482,047,148	N39.27728873	W080.86241783
Permitted Well Maple Unit 1H	87,163,258	482,040,207	N39.27745539	W080.86251156
Permitted Well Webb Unit 1H	87,190,847	482,040,937	N39.27752152	W080.86250898
Permitted Well Webb Unit 2H	87,191,239	482,053,923	N39.27727828	W080.86235897
Permitted Well Tally Unit 1H	87,188,040	482,044,180	N39.27734538	W080.86244327

Stacy Vogt
11/11/15

ANTERO RESOURCES CORPORATION
535 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
CLIENT

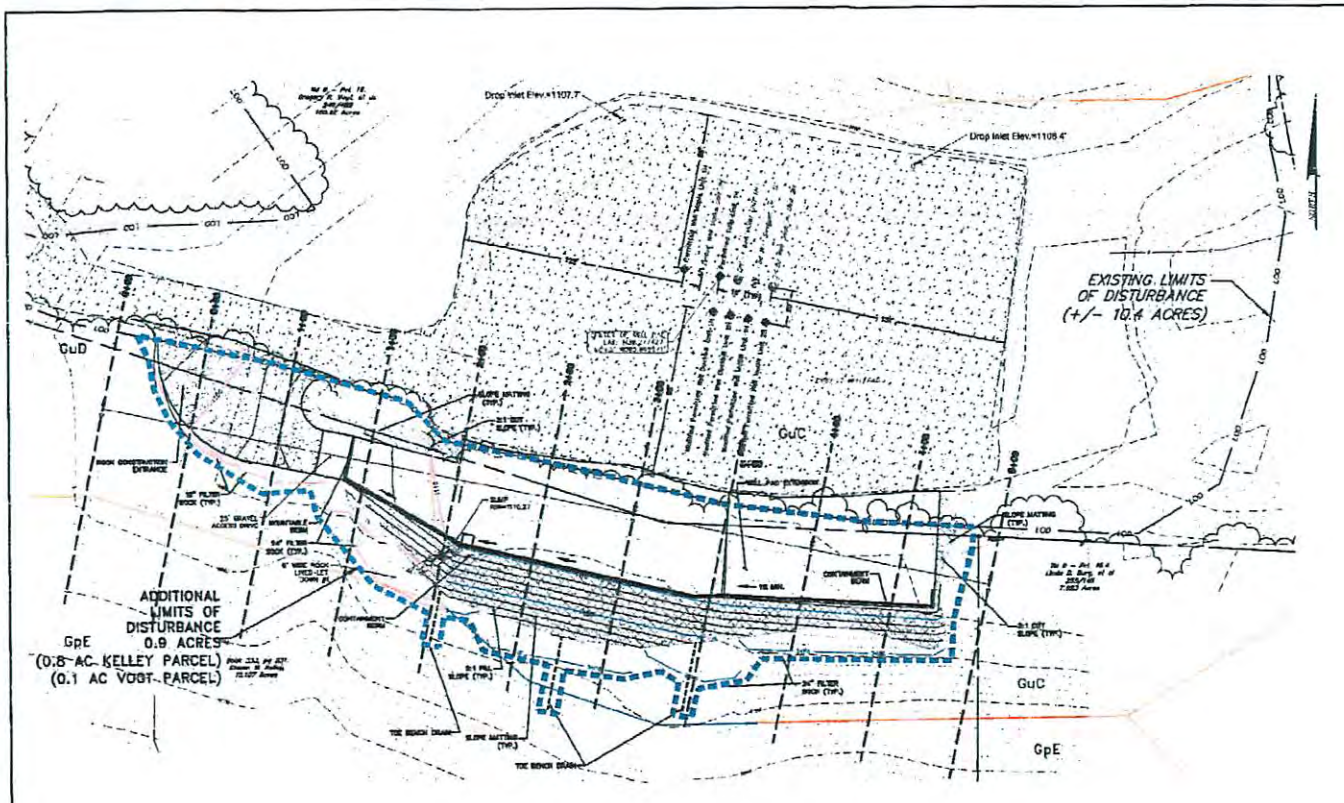
RETTEW
RETTEW Associates, Inc.
Engineers • Surveyors • Landscape Architects
Phone: (412) 446-1706 Fax: (412) 446-1723
Email: info@rettew.com
Web: www.rettew.com

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

DATE: 06/09/2015
SHEET NO. 1 OF 10
DWG. NO. 065452080

NOT FOR CONSTRUCTION/NOT FOR BIDDING

17 - 0646/6100



LEGEND

D. J. Vogt 11/11/15

EXISTING LIMITS OF DISTURBANCE:
10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
11.4 ACRES

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)				
Well Name	Northing (NAD83) (ft)	Easting (NAD83) (ft)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Morris Unit 1H	57,196,734	482,486,818	40.39.777.0239	W080.8613.0957
Drilled Well Snelsons Unit 1H	57,197,348	482,466,676	40.39.777.7172	W080.8620.7444
Drilled Well Snelsons Unit 2H	57,196,788	482,471,864	40.39.777.4788	W080.8618.8871
Drilled Well Vogel Unit 1H	57,196,907	482,489,861	40.39.777.4333	W080.8612.3914
Permitted Well Dunbar Unit 1H	57,197,835	482,463,885	40.39.777.7.326	W080.8620.9.183
Permitted Well Dunbar Unit 2H	57,198,027	482,464,874	40.39.777.7889	W080.8620.9.830
Permitted Well Maple Unit 1H	57,196,833	482,484,831	40.39.777.6943	W080.8613.4599
Permitted Well Unit 1H	57,197,423	482,467,861	40.39.777.8.318	W080.8613.7.447
Permitted Well Unit 2H	57,198,865	482,470,848	40.39.777.9.808	W080.8613.7.975
Permitted Well Tulip Unit 1H	57,198,898	482,482,949	40.39.777.9.730	W080.8613.7.005

WELLHEAD COORDINATES (NAD 27)				
Well Name	Northing (NAD27) (ft)	Easting (NAD27) (ft)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Morris Unit 1H	57,188,848	482,045,194	40.39.777.8.032	W080.8624.7678
Drilled Well Snelsons Unit 1H	57,188,850	482,025,153	40.39.777.3.808	W080.8631.7.868
Drilled Well Snelsons Unit 2H	57,189,212	482,030,140	40.39.777.3.502	W080.8629.2.983
Drilled Well Vogel Unit 1H	57,187,431	482,048,167	40.39.777.3.401.8	W080.8624.0.725
Permitted Well Dunbar Unit 1H	57,188,086	482,044,881	40.39.777.3.123	W080.8624.9.815
Permitted Well Dunbar Unit 2H	57,187,421	482,047,848	40.39.777.2.815	W080.8624.8.642
Permitted Well Maple Unit 1H	57,188,288	482,040,207	40.39.777.2.638	W080.8625.0.151
Permitted Well Unit 1H	57,188,847	482,028,927	40.39.777.2.8.15	W080.8628.8.898
Permitted Well Unit 2H	57,189,239	482,025,823	40.39.777.2.9.05	W080.8628.9.8
Permitted Well Tulip Unit 1H	57,188,560	482,048,180	40.39.777.3.4.28	W080.8624.4.327

Well Name	API #
Drilled Well Morris Unit 1H	# 47-017-06294-00
Drilled Well Snelsons Unit 1H	# 47-017-06168-00
Drilled Well Snelsons Unit 2H	# 47-017-06170-00
Drilled Well Vogel Unit 1H	# 47-017-05298-00
Permitted Well Dunbar Unit 1H	# 47-017-06847-00
Permitted Well Dunbar Unit 2H	# 47-017-06848-00
Permitted Well Maple Unit 1H	# 47-017-06590-00
Permitted Well Unit 1H	# 47-017-06693-00
Permitted Well Unit 2H	# 47-017-06695-00
Permitted Well Tulip Unit 1H	# 47-017-06238-00

Cut & Fill (Pad Extension Area)			
Cut (yds)		+	729
Shrink-	Depth (ft)=0.2	+	146
Fill (yds)		=	4,860
Compaction-	10%	-	729
Topsoil Strip-	Area (acres)=0.78	Depth (inches)	- 8470
Topsoil Replacement-	Area (acres)=0.21	Depth (inches)	+ 2282
Net (cuts-	Borrow		-5,154
Topsoil Net (yds)-	Excess		6132

Arlington Surveying & Mapping, Inc.
Tel: (304) 522-8541 Fax: (304) 522-8542
Email: info@arlingtonsurveying.com

CLIENT: Antero

REITZ & Associates, Inc.
Tel: (412) 440-1100 Fax: (412) 440-1122

EROSION AND SEDIMENT CONTROL PLAN
CONSTRUCTION DRAWINGS
FOR
VOGT
WELL PAD EXTENSION
CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 06/08/2015
SHEET NO. 1 OF 10
DWG. NO. 095452082

NOT FOR CONSTRUCTION/NOT FOR BIDDING

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

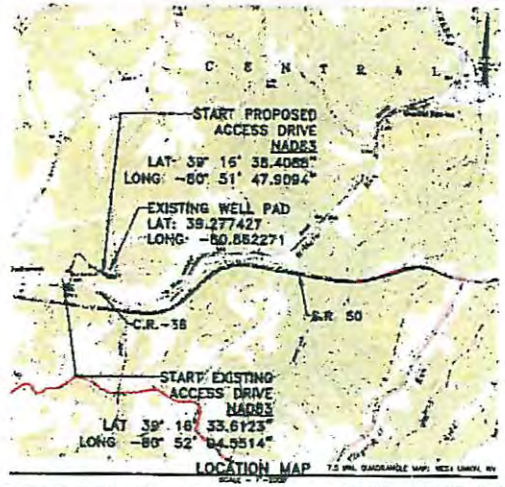
AS-BUILT & EXPANDED PAD CONSTRUCTION DRAWINGS

FOR

VOGT WELL PAD EXTENSION

CENTRAL TAX DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

LOCATION MAP
SCALE - 1"=200,000'



LOCATION MAP
SCALE - 1"=2000'
7.5 MIN. QUADRANGLE MAP: WEST UNION, WV

11-11-15

WEST VIRGINIA 811
CALL BEFORE YOU DIG! Dial 811 or 800.245.4848
It's the Law! - West Virginia Code § 24-7-1 et seq.

AT LEAST #6 BUSINESS DAY NOT MORE THAN 14 WORKING DAYS EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO ANY EXCAVATION ACTIVITIES. ALL CONTRACTORS SHALL BE IN FIELD ADDITION SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

SOILS CLASSIFICATION

GeC GILPIN-PEABODY COMPLEX, 25 TO 35 PERCENT SLOPES
GuC GILPIN-UPSHUR SILT LOAMS, 8 TO 15 PERCENT SLOPES
GuD GILPIN-UPSHUR SILT LOAMS, 15 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

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 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 NOTIFYING MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.
5. A WETLANDS PRESENCE/ABSENCE SURVEY WAS PERFORMED BY FORESTA & ASSOCIATES, INC.
6. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES 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 RETTEW 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 FRACSAND PIT CONSTRUCTION COMPLIES WITH THE FOLLOWING RESTRICTIONS:

- 200' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM OCCUPIED DWELLING OR BARN GREATER THAN 2,500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD.
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR.
- 300' FROM EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TROUT STREAM.
- 1,000' OF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

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

CENTRAL DISTRICT - DODDRIDGE COUNTY

OWNER	TM/PARCEL	DEED/PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACREAGE
JERRY NORMAN, et al	PID	304 / 370	18.50	ACCESS ROAD A	6.10
	TM 8 - Pcl 16				
				TOTAL	6.10
AMANDA J. RIFFLE	PID	290 / 178	35.40	ACCESS ROAD A	3.86
	TM 8 - Pcl 41			FRAC PIT	1.80
				TOTAL	5.66
GREGORY R. VOGT, II, JR	TM 8 - Pcl 16	298 / 489	198.82	ACCESS ROAD A	0.80
				FRAC PIT	2.00
				DRILL PAD	3.36
				PAD EXPANSION	0.14
				TOTAL	6.30
Steven W. Kelley, et ux	TM 8 - Pcl 16.3	299 / 333	15.167	PAD EXPANSION	0.90
				TOTAL	0.90
				GRAND TOTAL	11.27

LOCAL ANTERO OFFICE

179 ELK CREEK ROAD
WV, CLARK, WV 26105
PHONE (304) 622-3842

535 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330

LOCAL CONTACTS:
ELI WAGNER-ENVIRONMENTAL ENGINEER
PHONE (304) 622-3842 EXT. 318
CELL: (304) 476-9770

JOHN KANCAR-OPERATIONS SUPERINTENDENT
CELL: (817) 368-1350

AARON KINSLER-CONSTRUCTION SUPERVISOR
CELL: (405) 227-8344

ANTHONY SMITH-FIELD ENGINEER
PHONE (304) 888-3405
CELL: (304) 673-6186

ROBERT WIRTS-DESIGN MANAGER
PHONE (304) 842-4128
CELL: (304) 627-7405

DIRECTIONS TO THE SITE

FROM FRANKFORD, WV, TRAVEL EAST ON US 50 FOR APPROXIMATELY 4.0 MILES. TURN LEFT ONTO SUMMYSIDE ROAD AND TRAVEL 0.3 MILES. TURN RIGHT ONTO DUCKWORTH ROAD AND TRAVEL 1.0 MILES. TURN RIGHT TO STAY ON DUCKWORTH ROAD AND TRAVEL 0.3 MILES. TURN LEFT ONTO COOPER'S RIDGE ROAD AND ARRIVE AT THE VOGT WELL PAD ON THE RIGHT.

AS-BUILT AND PAD EXPANSION LOD (AC)	
ROAD A (2,541 FEET)	3.45
DRILL PAD	3.39
FRAC PIT	3.59
PAD EXPANSION	1.50
TOTAL AFFECTED AREA	11.43
TOTAL WOODED ACRES DISTURBED	8.96
TOTAL LINEAR FEET OF ACCESS ROAD	2,541

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)				
Well Name	Northing (NAD83) (M)	Easting (NAD83) (M)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Alpha Unit 1H	67,286,234	482,458,918	N039.27743336	W080.86230457
Drilled Well Beehive Unit 1H	67,167,399	482,468,870	N039.27741713	W080.86229144
Drilled Well Bedrock Unit 2H	67,166,788	482,473,884	N039.27741706	W080.86228871
Drilled Well Violet Unit 1H	67,166,057	482,465,859	N039.27743593	W080.86233854
Permitted Well Duckbill Unit 1H	67,102,826	482,481,680	N039.27723338	W080.86228383
Permitted Well Dolphin Unit 2H	67,102,017	482,484,874	N039.27720668	W080.86224870
Permitted Well Maple Unit 1H	67,199,832	482,458,631	N039.27743343	W080.86234039
Permitted Well Mollie Unit 1H	67,191,433	482,467,841	N039.27736318	W080.86221447
Permitted Well Merlin Unit 2H	67,190,816	482,470,648	N039.27726699	W080.86217978
Permitted Well Tulip Unit 1H	67,196,646	482,462,905	N039.27742730	W080.86227083

WELLHEAD COORDINATES (NAD 27)				
Well Name	Northing (NAD27) (M)	Easting (NAD27) (M)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Alpha Unit 1H	67,166,646	482,843,164	N039.27728533	W080.86247879
Drilled Well Beehive Unit 1H	67,166,830	482,852,932	N039.27733508	W080.86237298
Drilled Well Bedrock Unit 2H	67,166,219	482,855,149	N039.27733008	W080.86233787
Drilled Well Violet Unit 1H	67,165,431	482,848,187	N039.27734098	W080.86240733
Permitted Well Duckbill Unit 1H	67,102,658	482,864,951	N039.27729122	W080.86243819
Permitted Well Dolphin Unit 2H	67,101,488	482,867,848	N039.27728845	W080.86239042
Permitted Well Maple Unit 1H	67,188,256	482,840,307	N039.27735539	W080.86241191
Permitted Well Mollie Unit 1H	67,180,847	482,850,837	N039.27729512	W080.86230949
Permitted Well Merlin Unit 2H	67,180,228	482,853,920	N039.27727805	W080.86230987
Permitted Well Tulip Unit 1H	67,186,060	482,846,180	N039.27734871	W080.86244387

RETTEW Associates, Inc.
Engineers, Surveyors, Planners, Environmental Scientists
Pittsburgh, PA 15205 Phone (412) 548-1133 Fax (412) 548-1173
Mechanicsburg, PA 17055 Phone (717) 766-2393 Fax (717) 766-2395
Website: www.rettew.com

Antero

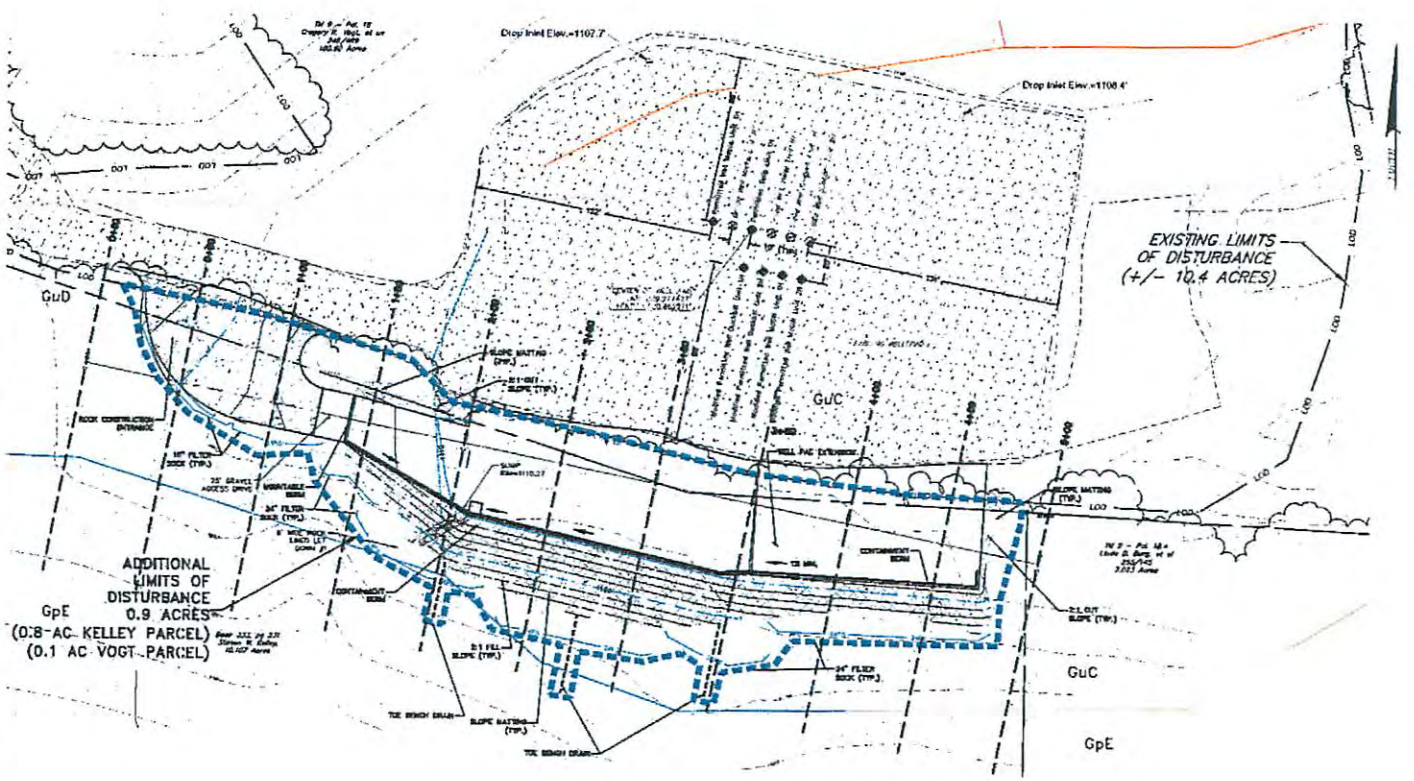
COVER SHEET
CONSTRUCTION DRAWINGS
FOR
VOGT
WELL PAD EXTENSION
CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 06/09/2015
SHEET NO. 1 OF 10
DWG. NO. 088452082

NOT FOR CONSTRUCTION/NOT FOR BIDDING

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

11-11-15



LEGEND

EXISTING PROPERTY LINE
EXISTING PAVEMENT
EXISTING STONE
EXISTING SOILS BOUNDARY
EXISTING WETLINE
EXISTING TREE
EXISTING MAJOR CONTOUR LINE
EXISTING MINOR CONTOUR LINE
EXISTING UTILITY POLE
EXISTING OVERHEAD ELECTRIC LINE
EXISTING UNDERGROUND ELECTRIC LINE
EXISTING GAS LINE
EXISTING SANITARY SEWER LINE
EXISTING FENCE LINE
EXISTING DRAINAGE PATH
EXISTING STREAM-EPHEMERAL
EXISTING STREAM-INTERMITTENT
EXISTING STREAM-PERENNIAL
EXISTING LIMITS OF DISTURBANCE
EXISTING AREA OF INTEREST
EXISTING WETLAND
COUNTY LINE
MUNICIPAL LINE
PROPOSED MAJOR CONTOUR LINE
PROPOSED MINOR CONTOUR LINE
PROPOSED WETLINE
PROPOSED GRAVEL
PROPOSED STORM PIPE
LIMITS OF DISTURBANCE

SCALE 1"=30'

NO.	DATE	REVISION

FOR BETTER ASSOCIATES BY:

MANAGER: ANDREW LEVINE, PE
DESIGN BY: JMS
DRAWN BY: JMS
SURV. CHIEF: NA
CHKD BY: MDD
CHKD BY: MDD
RELEASED NO: NA

CLIENT: Antero

BETTER ASSOCIATES, Inc.
Fax Tower, 4950 Stevenson Pk. Ste 200
Pittsburgh, PA 15225
Phone (412) 446-1729 Fax (412) 446-1733
Email: rettew@rettew.com
Website: www.rettew.com

EROSION AND SEDIMENT CONTROL PLAN
CONSTRUCTION DRAWINGS
FOR
VOGT
WELL PAD EXTENSION
CENTRAL DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 06/09/2015
SHEET NO. 3 OF 10
DWG. NO. 095452082

NOT FOR CONSTRUCTION/NOT FOR BIDDING

EXISTING LIMITS OF DISTURBANCE:
10.4 ACRES

NEW TOTAL LIMITS OF DISTURBANCE:
11.4 ACRES

EXISTING AND PROPOSED WELL COORDINATES

WELLHEAD COORDINATES (NAD 83)

Well Name	Northing (NAD83) (M)	Easting (NAD83) (M)	Lat (NAD83) (Dec. Deg.)	Long (NAD83) (Dec. Deg.)
Drilled Well Maize Unit 1H	87,160,254	482,470,960	N039.27743236	W080.86230557
Drilled Well Seaborn Unit 1H	87,167,316	482,468,876	N039.27741713	W080.86230144
Drilled Well Seaborn Unit 2H	87,166,708	482,471,894	N039.27741208	W080.86228871
Drilled Well Violet Unit 1H	87,166,057	482,485,994	N039.27742223	W080.86223694
Permitted Well Duckbill Unit 1H	87,192,838	482,461,866	N039.27737398	W080.86228263
Permitted Well Duckbill Unit 2H	87,192,007	482,464,674	N039.27736819	W080.86224920
Permitted Well Maple Unit 1H	87,191,823	482,456,931	N039.27743943	W080.86234029
Permitted Well MaGill Unit 1H	87,191,423	482,457,601	N039.27736346	W080.86221447
Permitted Well MaGill Unit 2H	87,190,965	482,470,646	N039.27735809	W080.86217679
Permitted Well Tulip Unit 1H	87,196,646	482,442,968	N039.27742730	W080.86227085

WELLHEAD COORDINATES (NAD 27)

Well Name	Northing (NAD27) (M)	Easting (NAD27) (M)	Lat (NAD27) (Dec. Deg.)	Long (NAD27) (Dec. Deg.)
Drilled Well Maize Unit 1H	87,166,648	492,043,184	N039.27735032	W080.86247679
Drilled Well Seaborn Unit 1H	87,166,620	492,052,152	N039.27733505	W080.86237286
Drilled Well Seaborn Unit 2H	87,166,252	492,066,140	N039.27733001	W080.86233783
Drilled Well Violet Unit 1H	87,167,431	492,046,167	N039.27734018	W080.86240735
Permitted Well Duckbill Unit 1H	87,192,058	492,044,394	N039.27729122	W080.86243515
Permitted Well Duckbill Unit 2H	87,191,451	492,047,949	N039.27726615	W080.86242043
Permitted Well Maple Unit 1H	87,188,256	492,040,207	N039.27735830	W080.86265731
Permitted Well MaGill Unit 1H	87,190,647	492,050,537	N039.27728172	W080.86236869
Permitted Well MaGill Unit 2H	87,190,239	492,053,923	N039.27727609	W080.86233087
Permitted Well Tulip Unit 1H	87,188,040	492,046,160	N039.27734526	W080.86244207

Well Name	API #
Drilled Well Maize Unit 1H	# 47-017-06266-00
Drilled Well Seaborn Unit 1H	# 47-017-06169-00
Drilled Well Seaborn Unit 2H	# 47-017-06170-00
Drilled Well Moist Unit 1H	# 47-017-06226-00
Permitted Well Duckbill Unit 1H	# 47-017-06667-00
Permitted Well Duckbill Unit 2H	# 47-017-06660-00
Permitted Well Maple Unit 1H	# 47-017-06560-00
Permitted Well MaGill Unit 1H	# 47-017-06635-00
Permitted Well MaGill Unit 2H	# 47-017-06636-00
Permitted Tulip Unit 1H	# 47-017-06236-00

Cut & Fill (Pad Extension Area)			
Cut (yds)			+ 720
Stone	Depth (in)=12		+ 930
Fill (yds)			+ 4,596
Compaction	10%		- 73
Topsoil Strip	Area (acre)=0.78	Depth (in)=6	- 842
Topsoil Replacement	Area (acre)=0.21	Depth (in)=6	+ 290
Net (yds)	Borrow		-3,134
Topsoil Net (yds)	Excess		612

RECEIVED
and Gas
2015
ment of
Protection