



west virginia department of environmental protection

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

www.dep.wv.gov

PERMIT MODIFICATION APPROVAL

/

Re: Permit Modification Approval for

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.

If there are any questions, please feel free to contact me at (304) 926- 0450.

A handwritten signature in blue ink, appearing to read "John P. ...", is positioned above the title "Chief".

Chief

Operator's Well Number:
Farm Name:
U.S. WELL NUMBER:

Date Modification Issued:

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

1) Well Operator: Antero Resources Corporation 494507062 085 - Ritchie Clay Pennsboro 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Cinqmars Unit 2H Well Pad Name: Weekley Trust

3) Farm Name/Surface Owner: David L. Weekley Public Road Access: CR 74-2

4) Elevation, current ground: 1235' Elevation, proposed post-construction: _____

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

Michael Hoff
8-16-18

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7000' TVD, Anticipated Thickness- 75 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18200' MD

11) Proposed Horizontal Leg Length: 10110'

12) Approximate Fresh Water Strata Depths: 338', 375'

13) Method to Determine Fresh Water Depths: Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: None Identified

15) Approximate Coal Seam Depths: 887'

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

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

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

Depth: _____

Seam: _____

Owner: _____

RECEIVED
Office of Oil and Gas

AUG 17 2018

WW-6B
(04/15)

Permit Modification API# 47-085-10342
 API NO. 47-085 - 10342 **11/16/2018**
 OPERATOR WELL NO. Cingmars Unit 2H
 Well Pad Name: Weekley Trust

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#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	425 *see # 19	425 *see # 19	CTS, 590 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	18200	18200	4597 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
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	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	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"	0.415"	12,630	2500	LEAD-HPOZ & TAL - 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			

RECEIVED
Office of Oil and Gas

AUG 17 2018

WV Department of
Environmental Protection

MAG
8-16-18

WW-6B
(10/14)

API NO. 47-085 - 10342 11/16/2018

OPERATOR WELL NO. Cinqmars Unit 2H

Well Pad Name: Weekley Trust

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.

*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

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): Existing 32.87 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 8.15 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed and Gas

RECEIVED

AUG 17 2018

WV Department of
Environmental Protection

Page 3 of 3

MAG
8-16-18

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>David L. Weekley Revocable Trust Lease</u>			
David L. Weekley Revocable Trust	Antero Resources Corporation	1/8+	0295/0030
<u>Norman Flemming, et ux Lease</u>			
Norman Flemming, et ux	Antero Resources Corporation	1/8+	0306/0511
<u>Haught Family Trust Lease</u>			
Haught Family Trust	Top Drilling Corporation	1/8	0257/0864
Top Drilling Corporation	Antero Resources Appalachian Corporation	Assignment	0258/0435
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Lori Pierpoint-Case Lease</u>			
Lori Pierpoint-Case	Antero Resources Corporation	1/8+	0308/0353
<u>Hellen N. McCullough Lease</u>			
Hellen N. McCullough	Alton Skinner	1/8	0135/0328
Alton Skinner	Chase Petroleum Inc	Assignment	0142/0374
Chase Petroleum Inc	Antero Resources Appalachian Corporation	Assignment	0254/0133
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Charles Allman Lease</u>			
Charles Allman	Antero Resources Appalachian Corporation	1/8+	0257/0162
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0015/0705
<u>Emerson McCullough, et al Lease</u>			
Emerson McCullough, et al	Alton Skinner	1/8	0176/0360
Alton Skinner	Chase Petroleum Inc	Assignment	0142/0374
Chase Petroleum Inc	Antero Resources Appalachian Corporation	Assignment	0254/0133
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Robert McCullough, et ux Lease</u>			
Robert McCullough, et ux	Jack Burg	1/8	0130/0445
Jack Burg	J&J Enterprises Inc	Assignment	0152/0114
J&J Enterprises Inc	Eastern American Energy Corp	Assignment	0231/0732
Eastern American Energy Corp	Energy Corp of America	Assignment	0306/0836
Energy Corp of America	Antero Resources Appalachian Corporation	Assignment	0257/0377

*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.

RECEIVED
Office of Oil and Gas

CONTINUED ON NEXT PAGE

AUG 6 2018

WV Department of
Environmental Protection

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
Carl W. Ridgeway, et ux Lease			
Carl W. Ridgeway, et ux	Excelo Incorporated	1/8	0197/0010
Excelo Incorporated	Appalachian Energy Development, Inc	Assignment	0197/0414
Appalachian Energy Development, Inc	Triad Energy Corporation of America	Assignment	0229/0108
Triad Energy Corporation of America	Viking International Resources Co. Inc	Assignment	0231/0015
Viking International Resources Co. Inc	Triad Energy Corporation	Assignment	0233/0953
Triad Energy Corporation	Triad Hunter, LLC	Assignment	0250/196
Triad Hunter, LLC	Antero Resources Corporation	Assignment	0281/0655

RECEIVED
 Office of Oil and Gas

AUG 6 2018

WV Department of
 Environmental Protection

WW-6A1
 (5/13)

Operator's Well No. Cinqmars Unit 2H

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Tom L. Richmond Lease</u>	Tom L. Richmond	Antero Resources Corporation	1/8+	0285/0886

*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.

RECEIVED
 Office of Oil and Gas

AUG 6 2018

WV Department of
 Environmental Protection

Well Operator: Antero Resources Corporation
 By: Maria Henry *Maria Henry*
 Its: VP of Geology

FORM WV-6A1
EXHIBIT 1

FILED

JUN 10 2013

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



Penney Barker, Manager
Corporations Division
Tel: (304)558-8800
Fax: (304)558-8381
Website: www.wvsec.com
E-mail: business@wvsec.com

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

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

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

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

- 1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachia Corporation
- 2. Date Certificate of Authority was issued in West Virginia: 6/26/2008
- 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.)

Alwyn A. Schopp (303) 367-7310
Contact Name Phone Number

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

Print Name of Signer: Alwyn A. Schopp Title/Capacity: Authorized Person
Signature: *Alwyn A. Schopp* Date: June 10, 2013

Important Local Notice Regarding Signatures For West Virginia Code §31B-1-12b. 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.

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection



RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection



Antero Resources Corporation

Cinqmars Unit 2H - AOR



WELL SYMBOLS
Gas Well
Waiting on Completion

CINQMARS UNIT 2H (WEEKLEY TRUST PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

Permit Modification API# 47-085-10342

UWI (API Num)	Well Name	Well Number	Operator	Hist Oper	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47085102010000	STRONSNIDER UNIT	1H	ANTERO RESOURCES CORPORATION	ANTERO RESOURCES CORPORATION	15672	N/A	Marcellus Fm	N/A
47085048350000	MCCULLOUGH BEN ETAL	2	ABARTA O&G CO INC	CHASE PETROLEUM CO	5170	4269-5030	Riley, Alexander	Bradford, Huron, Weir, Benson

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection

LATITUDE 39°22'30" 2,043'

LATITUDE 39°22'30"

LONGITUDE 80°52'30"

LONGITUDE 80°55'00"

11,004' TO BOTTOM HOLE

10,921' TO BOTTOM HOLE

Antero Resources Corporation Well No. Cinqmars Unit 2H 47-085-10342

NOTES: WELL 2H TOP HOLE INFORMATION: N: 320,638ft E: 1,597,472ft LAT: 39°22'17.70" LON: 80°55'26.01" BOTTOM HOLE INFORMATION: N: 310,835ft E: 1,600,223ft LAT: 39°20'41.24" LON: 80°54'49.01" 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: 4,358,024m E: 506,570m BOTTOM HOLE INFORMATION: N: 4,355,052m E: 507,459m



Table with 4 columns: TM-Par, Surface Owner, 2H TOP HOLE, Acreage. Lists various land parcels and owners.

Table with 2 columns: Royalty Owner, Name. Lists royalty owners for various parcels.

WV NORTH ZONE GRID NORTH



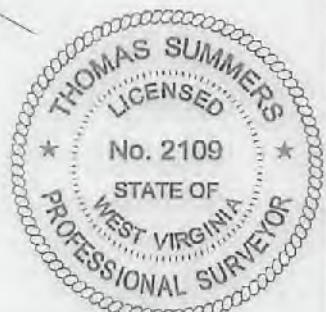
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS. WILLow LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

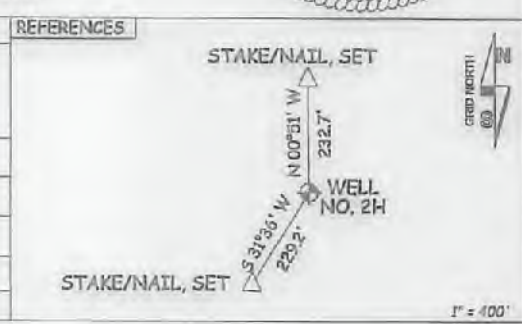
(NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,297,238ft E: 1,661,925ft POINT OF ENTRY INFORMATION: N: 14,296,997ft E: 1,661,422ft BOTTOM HOLE INFORMATION: N: 14,287,485ft E: 1,664,839ft

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.



JOB # 17-045WA DRAWING # CINQMARS 2HR SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROCVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Existing Fence, Found monument, as noted. Includes signature of Thomas Summers and date 07/30/18.



WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 085 10342 MOD (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,235' AS BUILT WATERSHED NORTH FORK HUGHES RIVER QUADRANGLE PENNSBORO 7.5 DISTRICT CLAY COUNTY RITCHIE SURFACE OWNER DAVID L. WEEKLEY REVOCABLE TRUST ACREAGE 203.38 ACRES +/- OIL & GAS ROYALTY OWNER DAVID L. WEEKLEY REVOCABLE TRUST; NORMAN FLEMING ET UX; LEASE ACREAGE 229 AC±; 130 AC±; HAUGHT FAMILY TRUST; LORI PIERPONT-GASE; CHARLES ALLMAN; HELEN N. McCULLOUGH; EMERSON McCULLOUGH ET AL; 323 AC±; 24.25 AC±; 60 AC±; 103 AC±; 154 AC±; ROBERT McCULLOUGH ET UX; CARL RIDGWAY ET UX; TOM L. RICHMOND; RONALD LEE RIDGWAY; ROBERT McCULLOUGH ET UX 148 AC±; 22.5 AC±; 0.3 AC±; 0.1 AC±; 148.5 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 7,000' TVD 18,200' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

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

1) Well Operator: Antero Resources Corporation 494507062 085 - Ritchie Clay Pennsboro 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Cinqmars Unit 2H Well Pad Name: Weekley Trust

3) Farm Name/Surface Owner: David L. Weekley Public Road Access: CR 74-2

4) Elevation, current ground: 1235' Elevation, proposed post-construction: _____

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

(b) If Gas Shallow Deep _____
Horizontal

RECEIVED
Office of Oil and Gas
AUG 6 2018

6) Existing Pad: Yes or No Yes

WV Department of
Environmental Protection

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7000' TVD, Anticipated Thickness- 75 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18200' MD

11) Proposed Horizontal Leg Length: 10110'

12) Approximate Fresh Water Strata Depths: 338', 375'

13) Method to Determine Fresh Water Depths: Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: None Identified

15) Approximate Coal Seam Depths: 887'

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

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

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

VOID

WW-6B
(04/15)

Permit Modification API# 47-085-10342
 API NO. 47- 085 - 10342 **11/16/2018**
 OPERATOR WELL NO. Cinqmars Unit 2H
 Well Pad Name: Weekley Trust

18) **CASING AND TUBING PROGRAM**

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	H-40	94#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	425 *see # 19	425 *see # 19	CTS, 590 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	18200	18200	4597 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	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"	0.415"	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			

VOID

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection

WW-6B
(10/14)

OPERATOR WELL NO. Cinqmars Unit 2H

Well Pad Name: Weekley Trust

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.

*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

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): Existing 32.87 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing 8.15 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

RECEIVED
Office of Oil and Gas

AUG 6 2018

Page 3 of 3

LATITUDE 39°22'30" 2,043'

10,921' TO BOTTOM HOLE

LATITUDE 39°22'30"

Antero Resources Corporation
Well No. Cinqmars Unit 2H
47-085-10342

NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 320,638ft E: 1,597,472ft
LAT: 39°22'17.70" LON: 80°55'26.01"
BOTTOM HOLE INFORMATION:
N: 310,835ft E: 1,600,223ft
LAT: 39°20'41.24" LON: 80°54'49.01"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE 6PS 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: 4,358,024m E: 506,570m
BOTTOM HOLE INFORMATION:
N: 4,355,052m E: 507,459m



TM-Per	Surface Owner	2H TOP HOLE	Acres
03-03	Brian Jones	298/295	14 AC
03-04	Brian Jones	298/295	30 AC
03-05	Denny Cowger	270/228	15.75 AC
03-09	Steven Haga	222/163	57 AC
03-9.1	Steven Haga	222/163	73 AC
03-10	David Weekley Revocable Trust	265/204	203.38 AC
03-11	Steven Haga	303/566	24.12 AC
03-11.1	Walter Hill	340/666	0.56 AC
03-11.2	Steven Haga	318/195	0.56 AC
03-11.3	David Weekley Revocable Trust	308/478	40 AC
03-11.4	Ovando Thelwell	311/749	76.56 AC
03-12	David Weekley Revocable Trust	265/204	25 AC
03-16	John Milligan	305/256	45.75 AC
03-16.1	John Milligan	305/256	25 AC
03-17	John Milligan	305/256	25 AC
03-18	Perkins Oil & Gas Inc.	308/653	24.7 AC
03-23	Charles Bobinis	297/766	60 AC
03-24	Charles Bobinis	297/766	40 AC
04-31.1	Burt Neswald Sr.	316/1040	90.65 AC
08-06	Walter Fleming	280/373	39.09 AC
08-6.2	Walter Fleming	280/373	53.7 AC
08-07	Troy Kirk	238/418	41.56 AC
08-7.1	W.V.D.O.H.	271/851	0.234 AC
08-08	Donna Ayers	269/588	LOT
08-8.1	Donna Ayers	269/588	LOT
08-8.2	Tom Richmond	322/759	LOT
08-18	David Lecece	287/309	40.67 AC
08-18.2	Troy Kirk	261/594	74.01 AC
08-19	Edwin Forman III	283/949	21.252 AC
08-19.1	Barbara Cornell	296/23	7.5 AC
08-19.4	Stephen Deak	340/270	2.156 AC
08-19.5	Troy Kirk	238/418	31.336 AC
03-26	Landrum Revocable Trust	240/488	39.935 AC
09-22	Randall Ridgway	279/207	22.932 AC
09-22.1	Randall Ridgway	279/207	27 AC

Royalty Owner
A Brian Keith Jones
B Brian Keith Jones
C Denny Cowger Et Ux
D Norman Fleming Et Ux
E David L. Weekley Revocable Trust
F Hought Family Trust
G John A. Milligan Et Al
H John A. Milligan Et Al
I John A. Milligan Et Al
J Lori Pierpont-Case
K Charles Allman
L Helen McCullough
M Charlene Cottrill
N Emerson McCullough Et Al
O Robert McCullough Et Ux
P Robert McCullough Et Ux
Q P&J Asset Management, LLC
R Eddie F. Landrum
S Ronald Lee Ridgway
T Tom L. Richmond
U Carl Ridgway Et Ux
V Edward T. Glissold

WV NORTH ZONE GRID NORTH

LONGITUDE 80°52'30"

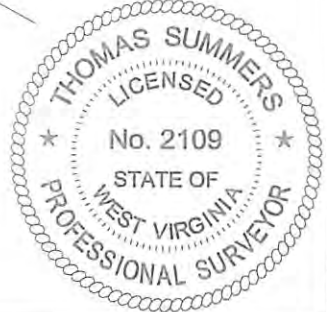
1,245' TO BOTTOM HOLE

11,004' TO BOTTOM HOLE



(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 14,297,238ft E: 1,661,925ft
POINT OF ENTRY INFORMATION:
N: 14,296,997ft E: 1,661,422ft
BOTTOM HOLE INFORMATION:
N: 14,287,485ft E: 1,664,839ft

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.



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

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

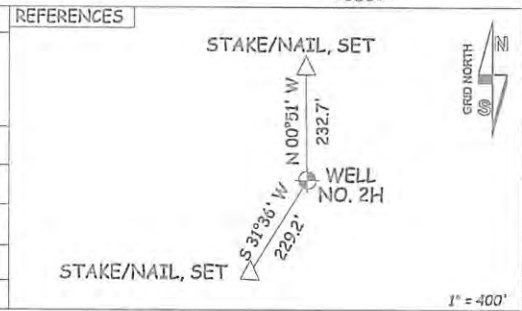
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 17-045WA
DRAWING # CINQMARS 2HR
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND
--- Surface Owner Boundary Lines +/-
--- Interior Surface Tracts +/-
X Existing Fence
Found monument as noted

THOMAS SUMMERS P.S. 2109

DATE 07/30/18
OPERATOR'S WELL# CINQMARS UNIT #2H



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 ___ 085 ___ 10342
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X STATE COUNTY PERMIT
LOCATION: ELEVATION 1,235' AS BUILT WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER DAVID L. WEEKLEY REVOCABLE TRUST ACREAGE 203.38 ACRES +/-
OIL & GAS ROYALTY OWNER DAVID L. WEEKLEY REVOCABLE TRUST; NORMAN FLEMING ET UX; HAUGHT FAMILY TRUST; LORI PIERPONT-CASE; CHARLES ALLMAN; HELEN N. MCCULLOUGH; EMERSON MCCULLOUGH ET AL; ROBERT MCCULLOUGH ET UX; CARL RIDGWAY ET UX; TOM L. RICHMOND; RONALD LEE RIDGWAY; ROBERT MCCULLOUGH ET UX
LEASE ACREAGE 229 AC +/-; 130 AC +/-; 323 AC +/-; 24.25 AC +/-; 60 AC +/-; 103 AC +/-; 154 AC +/-; 148 AC +/-; 22.5 AC +/-; 0.3 AC +/-; 0.1 AC +/-; 148.5 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 7,000' TVD 18,200' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

11/16/2018

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection

WEEKLEY TRUST WELL PAD & W AS-BUILT EROSION CONTROL IMPROVE

LOCATION COORDINATES

ACCESS ROAD ENTRANCE
 LATITUDE: 39.366897 LONGITUDE: -80.915223 (NAD 83)
 N 4357496.20 E 507302.94 (UTM ZONE 17 METERS)

CENTER OF TANK
 LATITUDE: 39.369138 LONGITUDE: -80.916700 (NAD 83)
 N 3457744.83 E 507175.49 (UTM ZONE 17 METERS)

CENTROID OF PAD
 LATITUDE: 39.371729 LONGITUDE: -80.923639 (NAD 83)
 N 4358031.88 E 506577.50 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION

THE ACCESS ROAD(S), WATER CONTAINMENT PAD, AND WELL PAD HAVE BEEN CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

FLOODPLAIN NOTE

THE SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" PER FEMA FLOOD MAP #54085C0125C.

MISS UTILITY STATEMENT

ANTERO RESOURCES CORPORATION HAS NOTIFIED MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN; TICKET #1421955455. IN ADDITION, MISS UTILITY WAS CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT

ANTERO RESOURCES CORPORATION HAS OBTAINED AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES

STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN JUNE, 2012, & REEVALUATED MAY, 2015 & SEPTEMBER, 2015 BY ALLSTAR ECOLOGY, LLC TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE OCTOBER 16, 2015 STREAM & WETLAND DELINEATION MAP WAS PREPARED BY ALLSTAR ECOLOGY, LLC AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.

GEOTECHNICAL NOTE

A SUBSURFACE INVESTIGATION OF THE SITE WAS PERFORMED BY PENNSYLVANIA SOIL & ROCK, INC. BETWEEN AUGUST 13, 2014 & SEPTEMBER 09, 2014. THE REPORT PREPARED BY PENNSYLVANIA SOIL & ROCK, INC. DATED SEPTEMBER 22, 2014, REVISED NOVEMBER 10, 2015, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY PENNSYLVANIA SOIL & ROCK, INC. FOR ADDITIONAL INFORMATION, AS NEEDED.

PROJECT CONTACTS

OPERATOR:

ANTERO RESOURCES CORPORATION
 535 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE: (304) 842-4100
 FAX: (304) 842-4102

ELI WAGONER - ENVIRONMENTAL ENGINEER
 OFFICE: (304) 842-4068 CELL: (304) 476-9770

JON McEVERS - OPERATIONS SUPERINTENDENT
 OFFICE: (303) 357-6799 CELL: (303) 808-2423

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

ROBERT B. WIRKS - FIELD ENGINEER
 OFFICE: (304) 842-4100 CELL: (304) 627-7405

CHARLES E. COMPTON, III - SURVEYING COORDINATOR
 CELL: (304) 719-6449

RENEE HECKEL - LAND AGENT
 CELL: (304) 614-7053

ENGINEER/SURVEYOR:

NAVITUS ENGINEERING, INC.
 CYRUS S. KUMP, PE - PROJECT MANAGER/ENGINEER
 OFFICE: (888) 662-4185 CELL: (540) 686-6747

ENVIRONMENTAL:

ALLSTAR ECOLOGY, LLC
 RYAN L. WARD - ENVIRONMENTAL SCIENTIST
 OFFICE: (866) 213-2666 CELL: (304) 892-7477

GEOTECHNICAL:

PENNSYLVANIA SOIL & ROCK, INC.
 CHRISTOPHER W. SAMIOS - PROJECT ENGINEER
 OFFICE: (412) 372-4000 CELL: (412) 589-0662

RESTRICTIONS NOTES:

1. THERE ARE NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD. THERE IS A WETLAND ADJACENT TO ACCESS ROAD "A" THAT HAS REMAINED UNDISTURBED.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
4. THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

REPRODUCTION NOTE

THESE PLANS WERE CREATED TO BE PLOTTED ON 22"x34" (ANSI D) PAPER. HALF SCALE DRAWINGS ARE ON 11"x17" (ANSI B) PAPER.

THESE PLANS WERE CREATED FOR COLOR PLOTTING AND ANY REPRODUCTIONS IN GRAY SCALE OR COLOR MAY RESULT IN A LOSS OF INFORMATION AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

CLAY DISTRICT, RITCHIE COUNTY
 CABIN RUN-NORTH FORK HUGHES

USGS 7.5 MIDDLEBOURNE & PENN



WEST VIRGINIA COUNTY MAP



AS-BUILT CERTIFICATION:

THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS §35-4-21, §22-6A, & CRS 35-8.

WATER CONTAINMENT PAD & SEDIMENT CONTROL PLAN

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection

SHEET INDEX

- 1 - COVER SHEET
- 2 - LEGEND
- 3 - OVERALL PLAN SHEET INDEX
- 4 - ACCESS ROAD & WATER CONTAINMENT PAD AS-BUILT PLAN
- 5 - ACCESS ROAD AS-BUILT PLAN
- 6 - WELL PAD AS-BUILT PLAN
- 7 - ACCESS ROAD AS-BUILT PROFILE, WELL PAD & WATER CONTAINMENT PAD AS-BUILT SECTIONS
- 8 - ACCESS ROAD AS-BUILT PROFILE
- 9 - STOCKPILE AS-BUILT SECTIONS

CLAY DISTRICT, WEST VIRGINIA
RIVER WATERSHED
SANDSBORO QUAD MAPS

WEST VIRGINIA STATE PLANE COORDINATE SYSTEM
NORTH ZONE, NAD83
ELEVATION BASED ON NAVD88
ESTABLISHED BY SURVEY GRADE GPS & OPUS
POST-PROCESSING

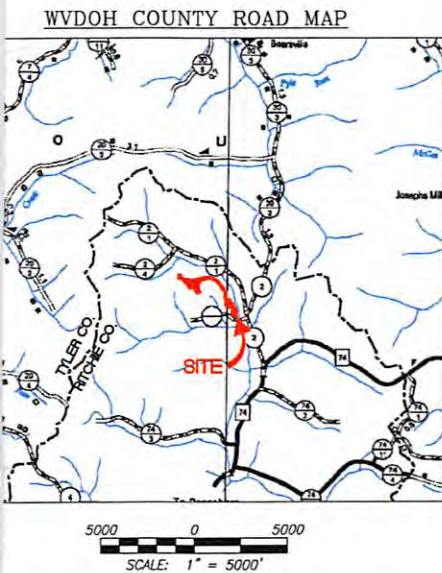


WEEKLEY TRUST LIMITS OF DISTURBANCE AREA (AC)	
Total Site	
Impacts to David L. Weekley, Trustee of the David L. Weekley Revocable Trust UTA TM 3-10	
Access Road "A" (749')	2.72
Access Road "B" (2,486')	10.67
Well Pad	8.15
Water Containment Pad	3.70
Excess/Topsoil Material Stockpiles	7.63
Total Affected Area	32.87
Total Wooded Acres Disturbed	30.22

Proposed Well Name	WV North NAD 27	WV North NAD 83	UTM (METERS) Zone 17	NAD 83 Lat & Long
Ray	N 320527.84	N 320662.16	N 4358020.94	LAT 39-22-17.8714
Unit 1H	E 1597402.38	E 1565961.32	E 506549.28	LONG -80-55-26.2802
Ray	N 320629.32	N 320663.64	N 4358021.44	LAT 39-22-17.8875
Unit 2H	E 1597412.28	E 1565971.21	E 506552.28	LONG -80-55-26.1546
Ray	N 320630.79	N 320695.11	N 4358021.94	LAT 39-22-17.9037
Unit 3H	E 1597422.17	E 1565981.10	E 506555.29	LONG -80-55-26.0290
Swartzmiller	N 320632.26	N 320666.59	N 4358022.44	LAT 39-22-17.9188
Unit 1H	E 1597432.06	E 1565990.99	E 506558.29	LONG -80-55-25.9033
Swartzmiller	N 320633.74	N 320668.06	N 4358022.94	LAT 39-22-17.9359
Unit 2H	E 1597441.95	E 1566000.88	E 506561.30	LONG -80-55-25.7777
Swartzmiller	N 320635.21	N 320669.54	N 4358023.44	LAT 39-22-17.9520
Unit 3H	E 1597451.84	E 1566010.77	E 506564.30	LONG -80-55-25.6520
Cinqmars	N 320636.69	N 320671.01	N 4358023.94	LAT 39-22-17.9682
Unit 1H	E 1597461.73	E 1566020.66	E 506567.31	LONG -80-55-25.5264
Cinqmars	N 320638.16	N 320672.49	N 4358024.44	LAT 39-22-17.9843
Unit 2H	E 1597471.62	E 1566030.55	E 506570.31	LONG -80-55-25.4008
Cinqmars	N 320639.64	N 320673.96	N 4358024.94	LAT 39-22-18.0004
Unit 3H	E 1597481.51	E 1566040.44	E 506573.32	LONG -80-55-25.2751
Cinqmars	N 320641.11	N 320675.44	N 4358025.44	LAT 39-22-18.0165
Unit 4H	E 1597491.40	E 1566050.33	E 506576.33	LONG -80-55-25.1495
Goliad	N 320642.59	N 320676.91	N 4358025.94	LAT 39-22-18.0327
Unit 1H	E 1597501.29	E 1566060.23	E 506579.33	LONG -80-55-25.0239
Goliad	N 320644.06	N 320678.38	N 4358026.44	LAT 39-22-18.0488
Unit 2H	E 1597511.18	E 1566070.12	E 506582.34	LONG -80-55-24.8982
Well Pad Elevation	1,235.0			

NOTES:

- ALL BMP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE ARE COMPLETE AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT IN EXCESS OF 0.5" AND ON A BIWEEKLY BASIS.
- THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.
- ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP.
- ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDDED.
- THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF MARCH 5, 2018. NAVITUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
- THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS
- THE EXISTING EGRESSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.



MISS Utility of West Virginia
1-800-245-4848
West Virginia State Law
(Section XIV: Chapter 24-C)
Requires that you call two
business days before you dig in
the state of West Virginia.
IT'S THE LAW!!



REVISION	DATE



WEEKLEY TRUST
WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA



DATE: 03/05/2018
SCALE: AS SHOWN
SHEET 1 OF 9

LEGEND

LEGEND		
EX. INDEX CONTOUR & CONTOUR LABEL		PR. INDEX CONTOUR
EX. INTERMEDIATE CONTOUR		PR. INTERMEDIATE
EX. PROPERTY LINE		PR. INTERMEDIATE
EX. TOP OF BERM		PR. INDEX ROAD C
EX. ROAD EDGE OF GRAVEL/DIRT		PR. INTERMEDIATE
EX. ROAD EDGE OF PAVEMENT		PR. PADS/STOCKP
EX. ROAD CENTERLINE		PERMITTED LIMITS
EX. GUARDRAIL		MODIFICATION LIM
EX. BRIDGE		PR. ROAD/IMPOUN
EX. DITCHLINE/DRAINAGE FEATURE		PR. ROAD CENTER
EX. RIP-RAP		PR. GUARDRAIL
EX. CULVERT		PR. ROCK CONSTR
EX. TREELINE		PR. AIR BRIDGE
EX. BUILDING		PR. CULVERT
EX. MISCELLANEOUS FEATURE		PR. DITCH
EX. 100 YR FEMA FLOODPLAIN		PR. RIP-RAP TRAN
EX. DELINEATED STREAM		PR. OUTLET PROT
EX. DELINEATED WETLAND/POND		PR. DIVERSION
100' WETLAND/STREAM BUFFER		PR. ROCK LEVEL
STREAM/WETLAND DELINEATION STUDY AREA		PR. COMPOST FIL
EX. FENCELINE		PR. SUPER SILT F
EX. GATE		PR. WELL HEAD
EX. PERIMETER SAFETY FENCE		PR. PAD DEWATER
EX. ACCESS GATE WITH EMERGENCY LIFELINE		PR. TOP OF PAD
EX. WELL HEAD ON DESIGNED PAD		PR. 220' X 320' P
EX. GAS WELL		PR. SPOT SHOT
EX. PIPELINE		PR. PERIMETER S
EX. PIPELINE R/W		PR. ACCESS GATE
EX. PIPELINE METER		PR. PIPELINE
EX. PIPELINE VALVE		PR. PIPELINE R/W
EX. PIT		PR. OVERHEAD UT
EX. OVERHEAD UTILITY		PR. POWER POLE/
EX. POWER POLE/GUY WIRE		PR. OVERHEAD UT
EX. UNDERGROUND ELECTRIC		PR. WATERLINE
EX. UNDERGROUND TELEPHONE		BORING LOCATION
EX. UNDERGROUND FIBER OPTIC		X-SECTION/PROFI
EX. UTILITY R/W		X-SECTION/PROFI
EX. WATERLINE		X-SECTION/PROFI
EX. WATER WELL/EX. SPRING		X-SECTION/PROFI
EX. COMPOST SOCK		X-SECTION/PROFI
EX. SUPER SILT FENCE		X-SECTION/PROFI
EX. SILT FENCE		MATCHLINE
APPROX. LOCATION OF SLIDE AREA		EX. METER
APPROX. LOCATION OF BORROW/ SPOIL AREA		EX. TANK
PR. TOE BENCH		EX. COMBUSTOR
EX. APPROX. SURFACE & SUB-SURFACE ELECTRIC LINE AREA		EX. GPU
EX. APPROX. SURFACE & SUB-SURFACE DUMP LINE AREA		EX. SEPARATOR
EX. APPROX. SURFACE & SUB-SURFACE WELL LINE AREA		EX. VRT
EX. APPROX. SURFACE & SUB-SURFACE SALES LINE AREA		EX. KNOCK-OUT

CONTOUR (10' INTERVAL) & CONTOUR LABEL		1000
CONTOUR (2' INTERVAL)		
CONTOUR (1' INTERVAL)		
ROAD CONTOUR (10' INTERVAL) & CONTOUR LABEL		1000
ROAD CONTOUR (2' INTERVAL)		
TOPO LIMITS		
BOUNDARY OF DISTURBANCE		
BOUNDARY OF DISTURBANCE		
PERMANENT EDGE OF GRAVEL		
UTILITY LINE		
FUNCTION ENTRANCE		
STAIRS		
TRAPEZOIDAL DITCH		
DRAINAGE		
PIPER		
PIPER SOCK		
SEWER		
SEWER SYSTEM		
CONTAINMENT BERM		
ROAD FOOTPRINT		
SAFETY FENCE		1000' X
SAFETY FENCE WITH EMERGENCY LIFELINE		
UTILITY		
UTILITY WIRE		
UTILITY R/W		
GRID INDEX		
GRID INTERMEDIATE		
PROPOSED GRADE		
EXISTING GRADE		
WATER SURFACE		
CULVERT		
EX. STAIRS/CATWALK		
EX. DEWATERING SYSTEM		
EX. PIG LAUNCHER		
EX. SECONDARY CONTAINMENT		
EX. ABOVE-GND VAPOR LINE		
EX. ESD		
EX. MAILBOX		
EX. CONTROL PT.		
EX. MUSTER AREA		



REVISION	
DATE	



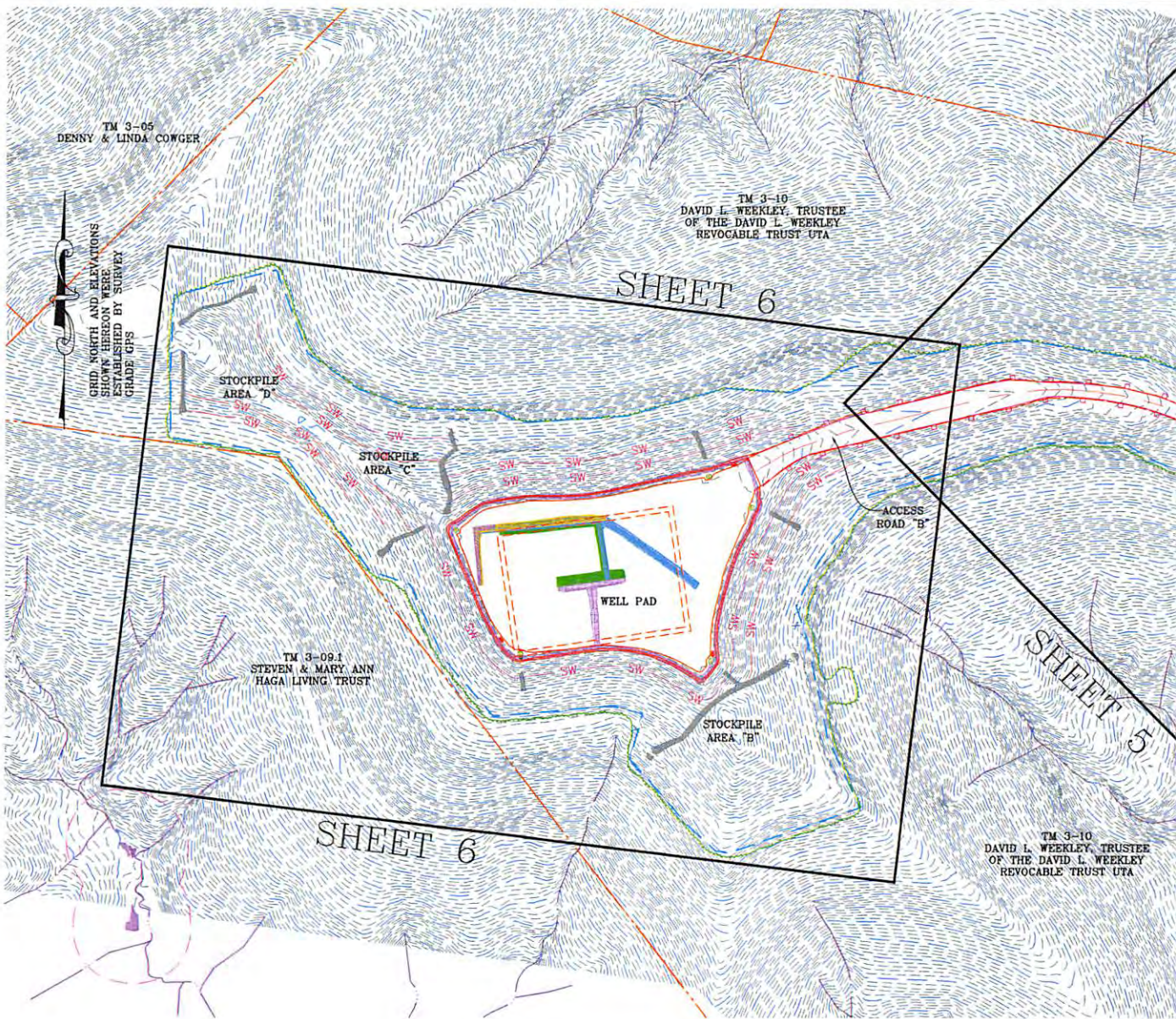
LEGEND

WEEKLEY TRUST
WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

RECEIVED
Office of Oil and Gas
AUG 6 2018
WV Department of
Environmental Protection

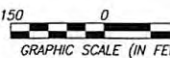


DATE: 03/05/2018
SCALE: N/A
SHEET 2 OF 9



GENERAL NOTES:

1. THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON APRIL 6, 2014 AERIAL PHOTOGRAPHY COMPILED MAY, 2014 BY BLUE MOUNTAIN AERIAL MAPPING, BURTON, WEST VIRGINIA.
2. AS-BUILT INFORMATION SHOWN HEREON IS BASED ON FIELD SURVEY PERFORMED BY NAVITUS ENGINEERING, INC. BETWEEN OCTOBER 20, 2017 TO MARCH 5, 2018.
3. THE PROPERTY LINES SHOWN HEREON DO NOT REPRESENT A BOUNDARY SURVEY ON ANY OF THE PARCELS SHOWN. PROPERTY CORNERS AND LINES PERTINENT TO WELL LOCATION ARE BASED ON A FIELD SURVEY. THE REMAINDER OF THE PROPERTY LINES ARE BASED ON COUNTY REAL ESTATE TAX MAPS, GIS INFORMATION AND DEEDS OF RECORD.
4. UTILITIES AND THEIR LOCATIONS AS SHOWN HEREON ARE BASED ON: A) OBSERVABLE EVIDENCE OF THOSE VISIBLE, ABOVE-GROUND FACILITIES, FEATURES, AND MARKERS WHICH WERE FOUND ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY PERFORMED BY NAVITUS ENGINEERING AND B) FIELD MARKINGS PLACED BY UTILITY COMPANIES IN RESPONSE TO THE WV 811 TICKET SUBMITTED BY NAVITUS ENGINEERING. NAVITUS ENGINEERING CANNOT GUARANTEE THE ACCURACY OF THE UTILITY MARKINGS PERFORMED BY OTHERS OR THAT ALL UTILITIES EXISTING WITHIN THE LIMITS OF THIS PLAN ARE SHOWN. ANY UTILITIES ENCOUNTERED SUBSEQUENT TO PLAN APPROVAL OR DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE PLAN SHOULD BE REPORTED TO NAVITUS ENGINEERING AND ANTERO RESOURCES CORPORATION.



11/16/2018

OVERALL PLAN SHEET INDEX

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection



TM 3-08
MYRON D. PERKINS, DEANA M.
HUDKINS, KYLE D. PERKINS, ANDY
W. PERKINS & TONY A. PERKINS

TM 3-26
CHRISTOPHER
K. HAYMOND

TM 3-7
CHRISTOPHER K. HAYMOND

TM 4-05
CHRISTOPHER K. HAYMOND

TM 3-10
DAVID L. WEEKLEY, TRUSTEE
OF THE DAVID L. WEEKLEY
REVOCABLE TRUST UTA

TM 4-09
CHRISTOPHER
K. HAYMOND

TM 4-15
DANIEL HAYMOND (LIFE)
& DANIEL W. HAYMOND III &
CHRISTOPHER K. HAYMOND

ACCESS
ROAD "B"

SHEET 5

SHEET 4

ACCESS
ROAD "B"

WATER
CONTAINMENT
PAD

STOCKPILE
AREA "A"

ACCESS
ROAD "A"

SHEET 4

REVISION	DATE



OVERALL PLAN SHEET INDEX
WEEKLEY TRUST
WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA



DATE: 03/05/2018
SCALE: 1" = 150'
SHEET 3 OF 9

150'

ACCESS ROAD & WATER CONT

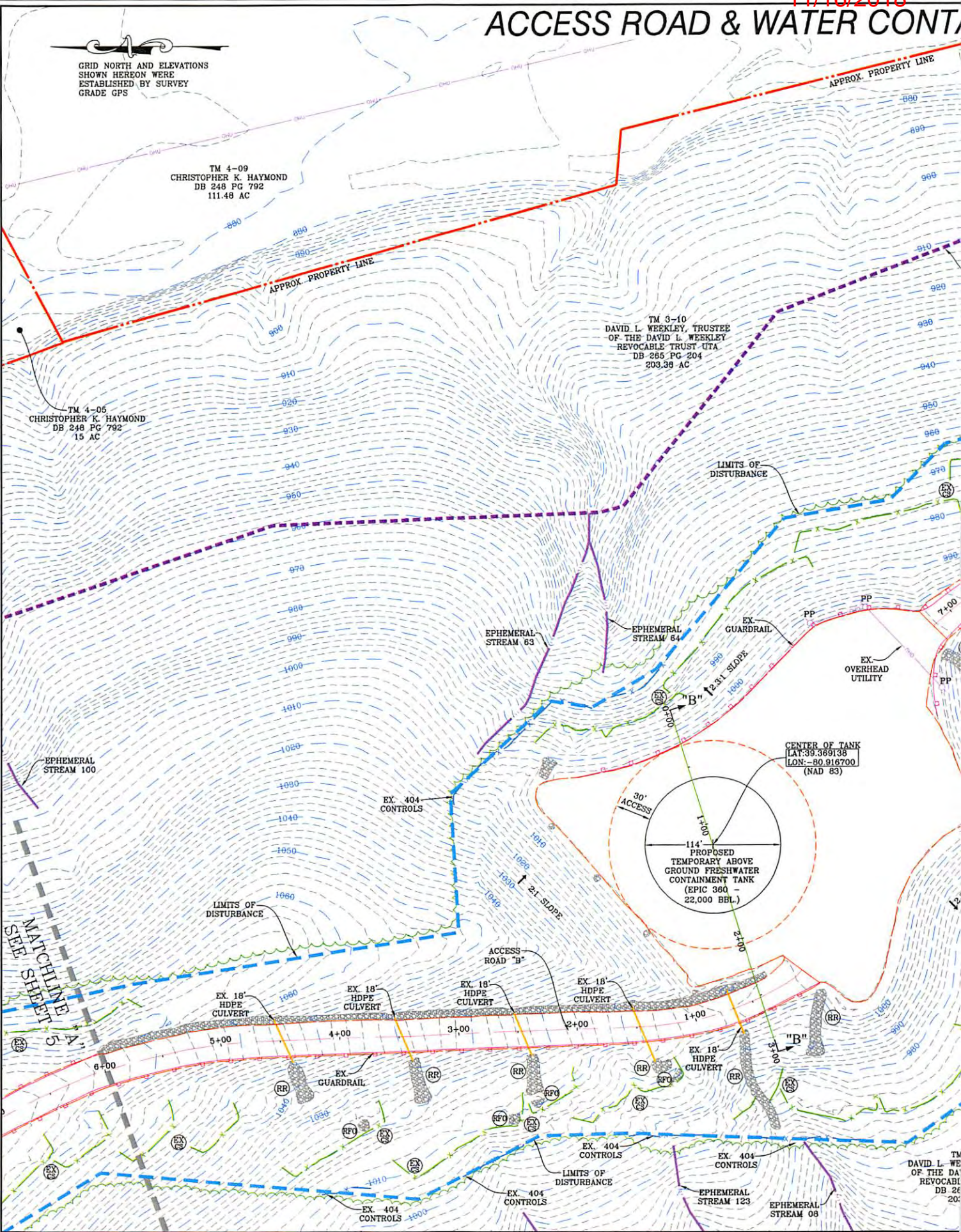
GRID NORTH AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY SURVEY GRADE GPS

TM 4-09
CHRISTOPHER K. HAYMOND
DB 248 PG 792
111.48 AC

TM 4-05
CHRISTOPHER K. HAYMOND
DB 248 PG 792
15 AC

TM 3-10
DAVID L. WEEKLEY, TRUSTEE
OF THE DAVID L. WEEKLEY
REVOCABLE TRUST UTA
DB 285 PG 204
203.98 AC

CENTER OF TANK
LAT: 39.369138
LON: -80.916700
(NAD 83)



TM 3-10
DAVID L. WEEKLEY, TRUSTEE
OF THE DAVID L. WEEKLEY
REVOCABLE TRUST UTA
DB 285 PG 204
203.98 AC

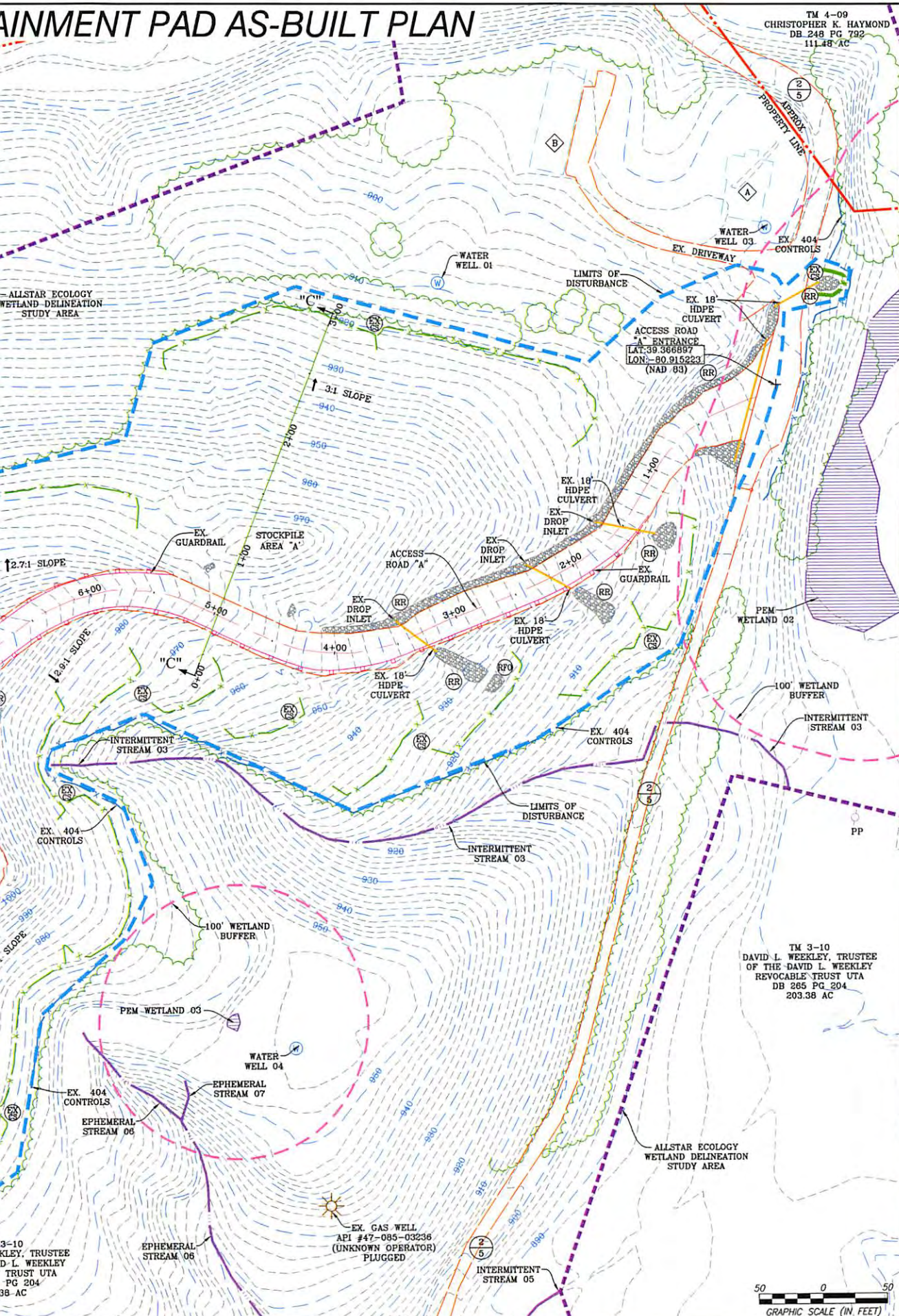
CONTAINMENT PAD AS-BUILT PLAN

TM 4-09
CHRISTOPHER K. HAYMOND
DB 248 PG 792
111.48 AC



Telephone: (888) 662-4185 | www.NavitusEng.com

ALLSTAR ECOLOGY
WETLAND DELINEATION
STUDY AREA



REVISION	DATE



THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

ACCESS ROAD & WATER CONTAINMENT PAD
AS-BUILT PLAN

WEEKLEY TRUST

WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

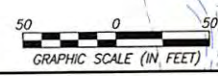
TM 3-10
DAVID L. WEEKLEY, TRUSTEE
OF THE DAVID L. WEEKLEY
REVOCABLE TRUST UTA
DB 285 PG 204
203.38 AC



DATE: 03/05/2018

SCALE: 1" = 50'

SHEET 4 OF 9



3-10
WEEKLEY, TRUSTEE
D. L. WEEKLEY
TRUST UTA
PG 204
38 AC

EX GAS WELL
API #47-085-03236
(UNKNOWN OPERATOR)
PLUGGED

11/16/2018

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection

11/16/2018

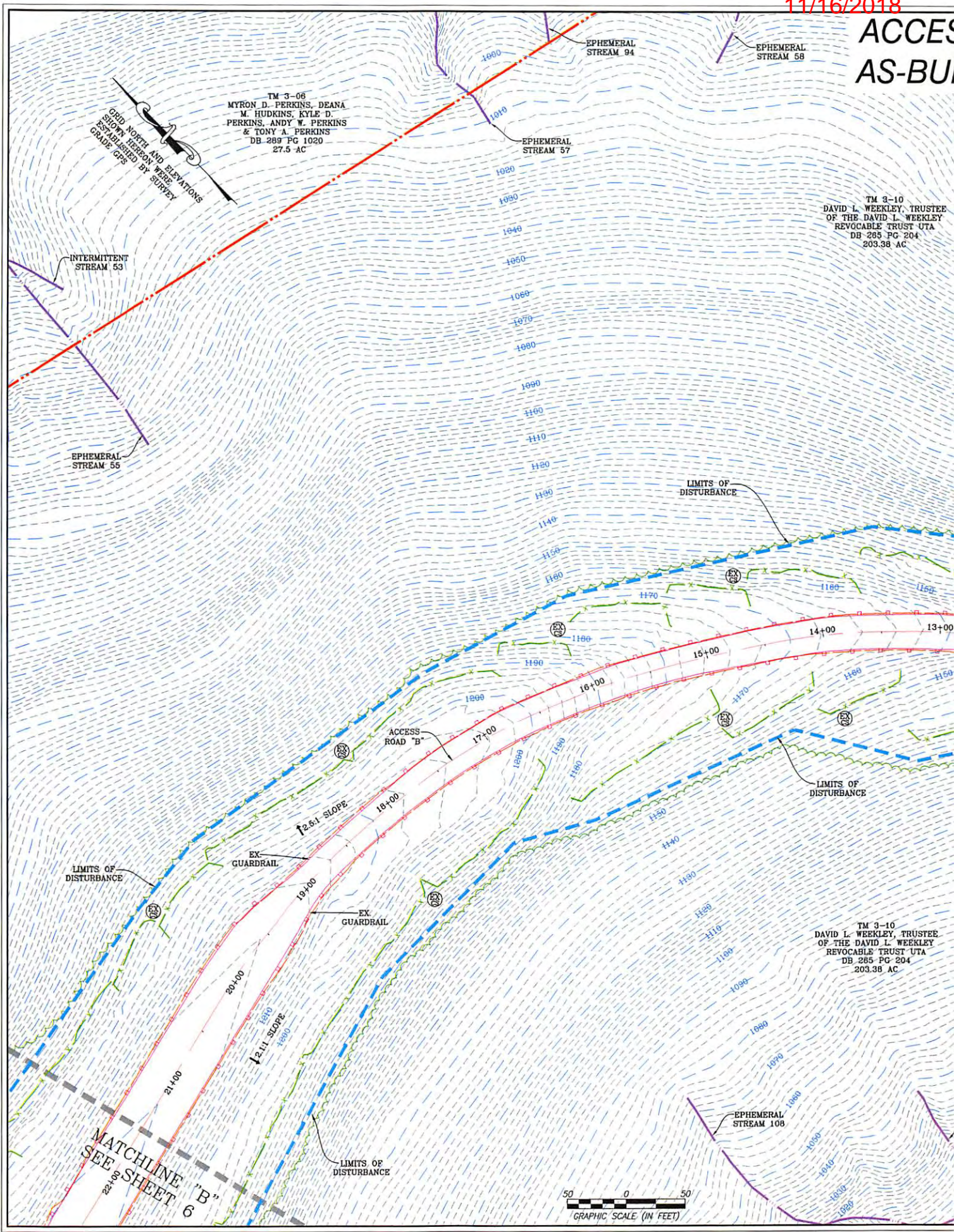
ACCESS AS-BUILT

GRID NORTH AND ELEVATIONS ESTABLISHED BY SURVEY
SHOWN HEREON WERE ESTABLISHED BY SURVEY

TM 3-06
MYRON D. PERKINS, DEANA M. HUCKINS, KYLE D. PERKINS, ANDY W. PERKINS & TONY A. PERKINS
DB. 289 PG 1020
27.5 AC

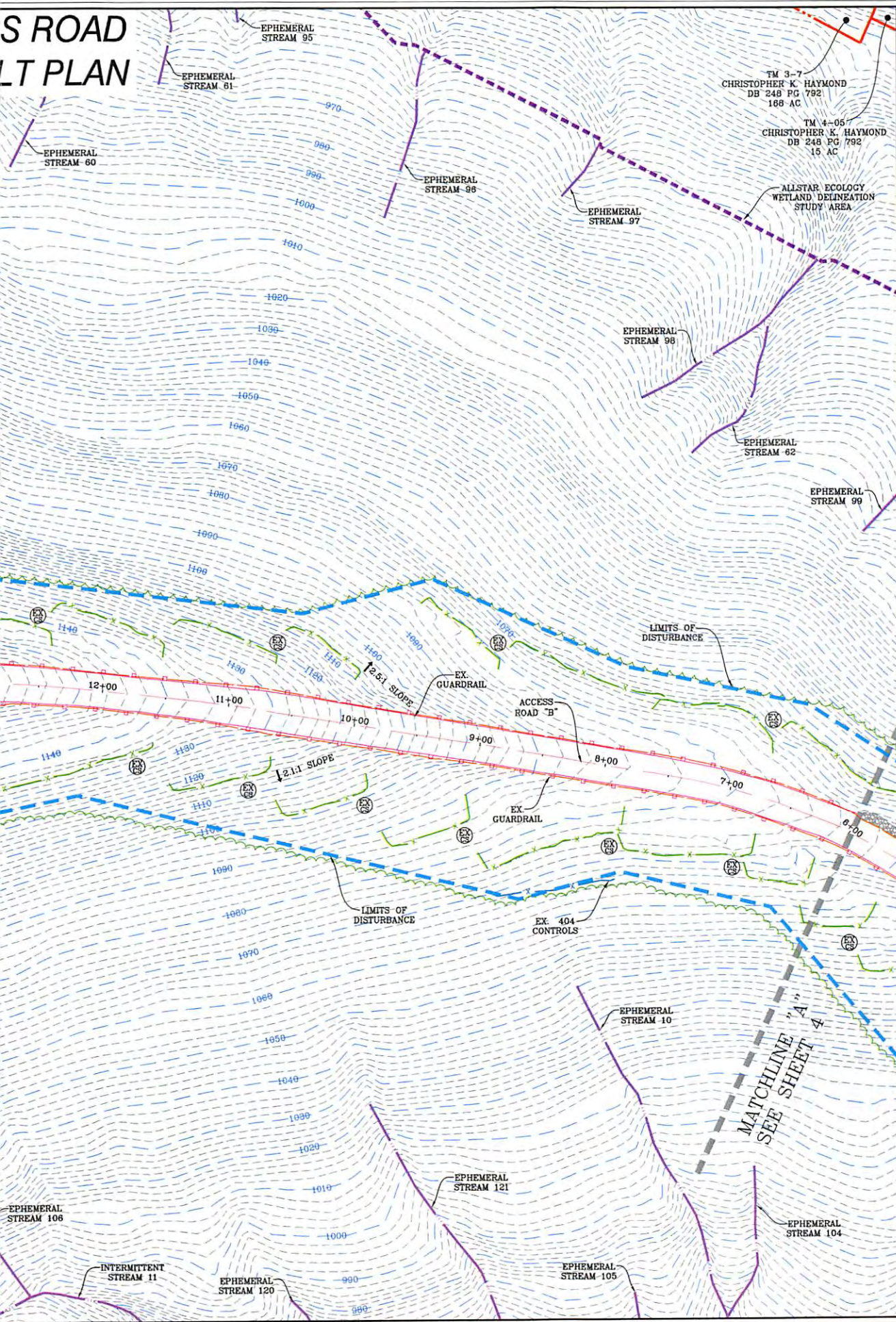
TM 3-10
DAVID L. WEEKLEY, TRUSTEE OF THE DAVID L. WEEKLEY REVOCABLE TRUST UTA
DB. 265 PG 204
203.38 AC

TM 3-10
DAVID L. WEEKLEY, TRUSTEE OF THE DAVID L. WEEKLEY REVOCABLE TRUST UTA
DB. 265 PG 204
203.38 AC



11/16/2018

S ROAD ALT PLAN



NAVITUS
ENERGY ENGINEERING

Telephone: (888) 662-4185 | www.NavitusEng.com

DATE	REVISION

THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

ACCESS ROAD AS-BUILT PLAN
WEEKLEY TRUST
WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

03/05/2018

DATE: 03/05/2018
SCALE: 1" = 50'
SHEET 5 OF 9

11/16/2018

RECEIVED
Office of Oil and Gas

AUG 6 2018

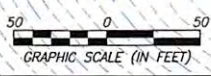
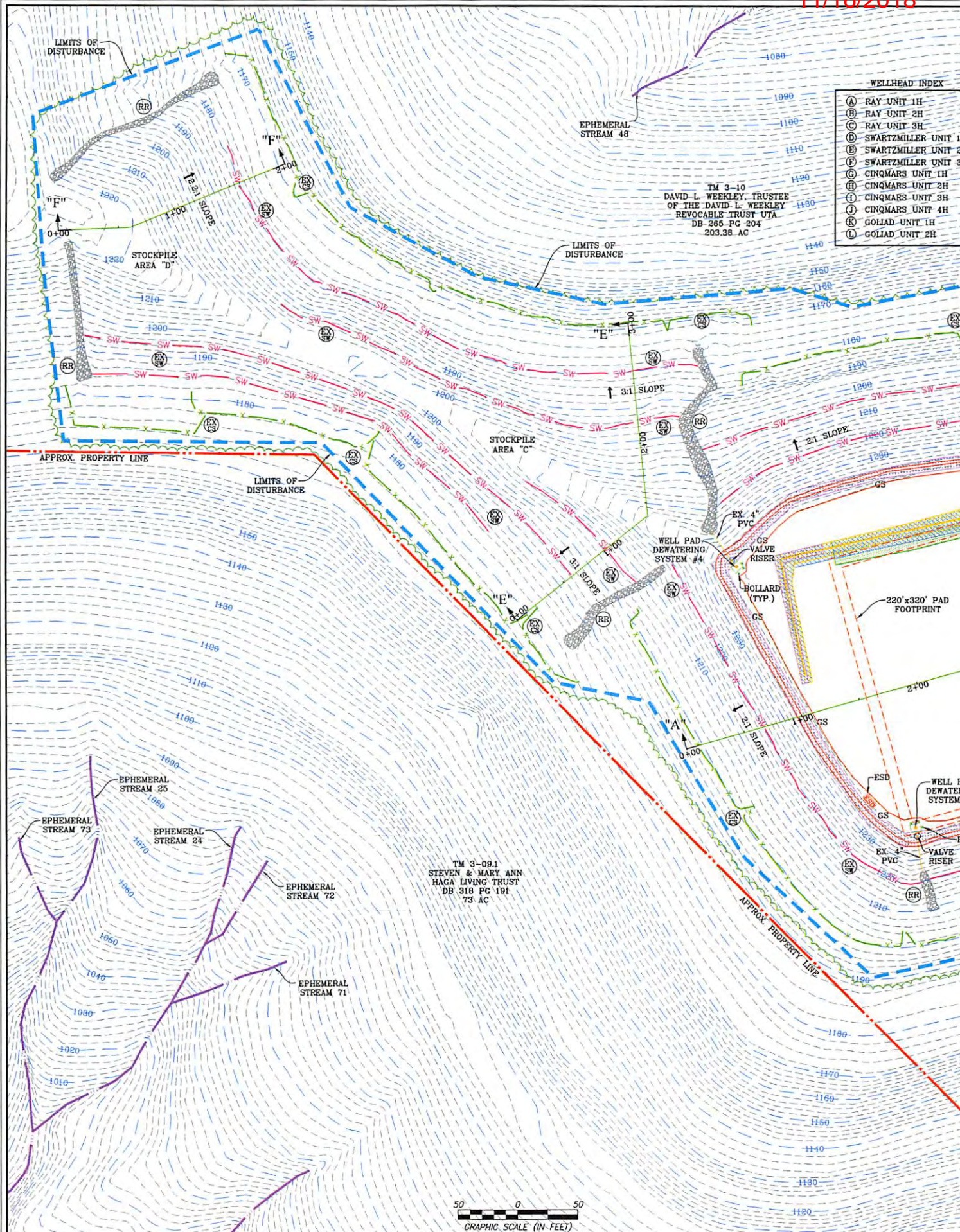
WV Department of
Environmental Protection

WELLHEAD INDEX

(A)	RAY UNIT 1H
(B)	RAY UNIT 2H
(C)	RAY UNIT 3H
(D)	SWARTZMILLER UNIT 1H
(E)	SWARTZMILLER UNIT 2H
(F)	SWARTZMILLER UNIT 3H
(G)	CINQMARS UNIT 1H
(H)	CINQMARS UNIT 2H
(I)	CINQMARS UNIT 3H
(J)	CINQMARS UNIT 4H
(K)	GOLLAD UNIT 1H
(L)	GOLLAD UNIT 2H

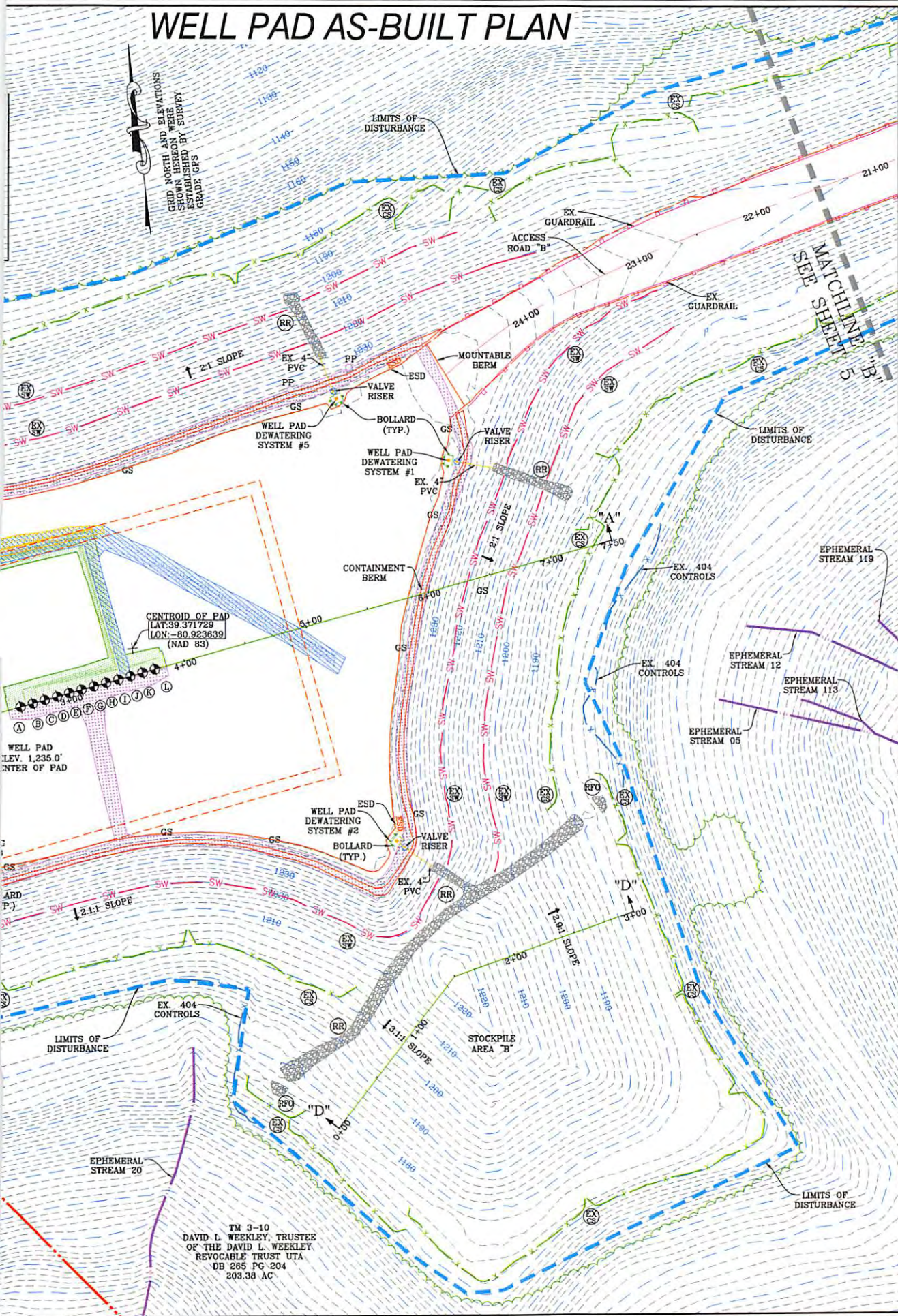
TM 3-10
DAVID L. WEEKLEY, TRUSTEE
OF THE DAVID L. WEEKLEY
REVOCABLE TRUST UTA
DB 205 PG 204
203.38 AC

TM 3-09.1
STEVEN & MARY ANN
HAGA LIVING TRUST
DB 318 PG 191
73 AC



WELL PAD AS-BUILT PLAN

NAVITUS
 ENERGY ENGINEERING
 Telephone: (888) 662-4185 | www.NavitusEng.com



REVISION	DATE

Antero Resources
 THIS DOCUMENT WAS PREPARED FOR:
 ANTERO RESOURCES CORPORATION

WELL PAD AS-BUILT PLAN
WEEKLEY TRUST
 WELL PAD & WATER CONTAINMENT PAD
 CLAY DISTRICT
 RITCHIE COUNTY, WEST VIRGINIA



TM 3-10
 DAVID L. WEEKLEY, TRUSTEE
 OF THE DAVID L. WEEKLEY
 REVOCABLE TRUST UTA
 DB 265 PG 204
 203.38 AC

DATE: 03/05/2018
 SCALE: 1" = 50'
 SHEET 6 OF 9

11/16/2018

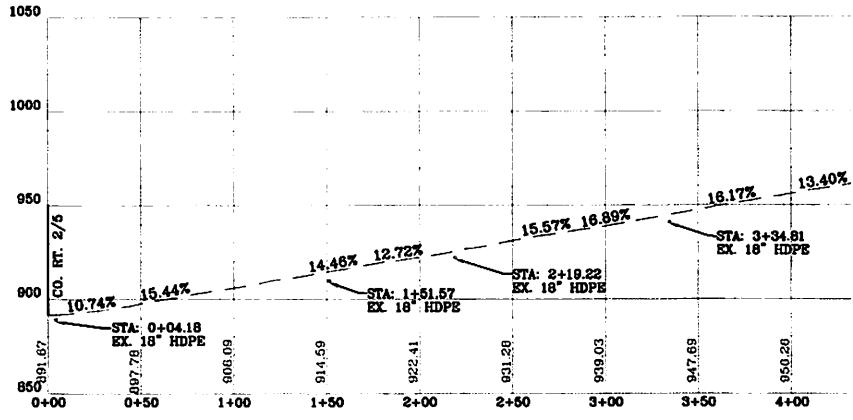
RECEIVED
Office of Oil and Gas

AUG 6 2018

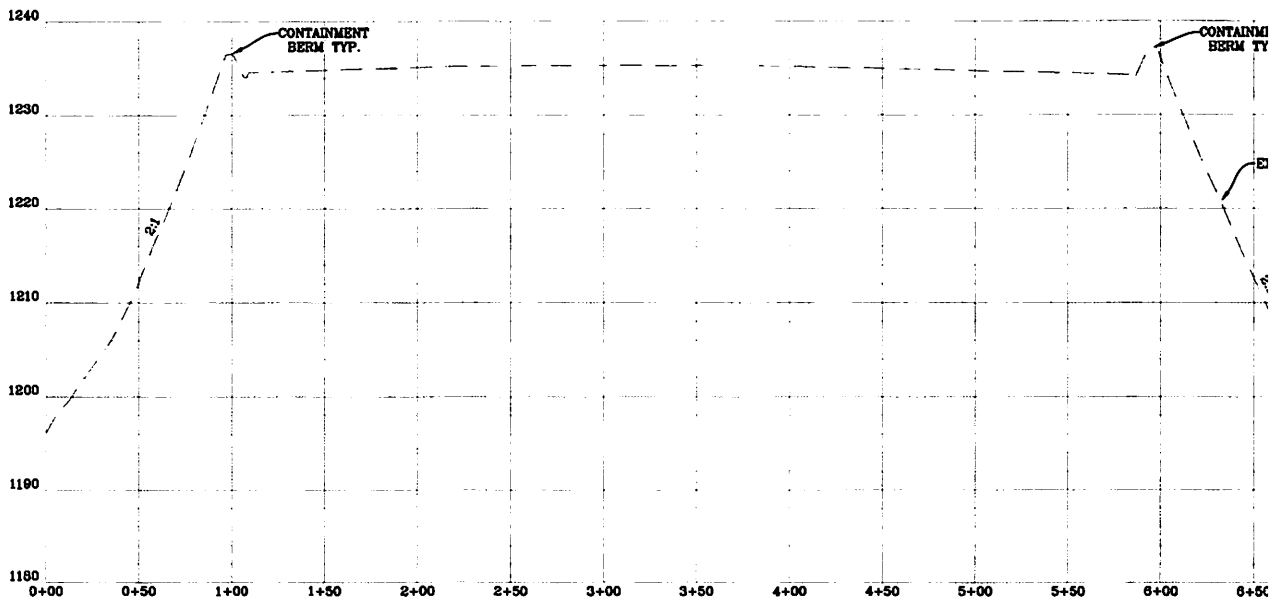
WV Department of
Environmental Protection

11/16/2018

ACCESS ROAD AS-BUILT CONTAINMENT PA

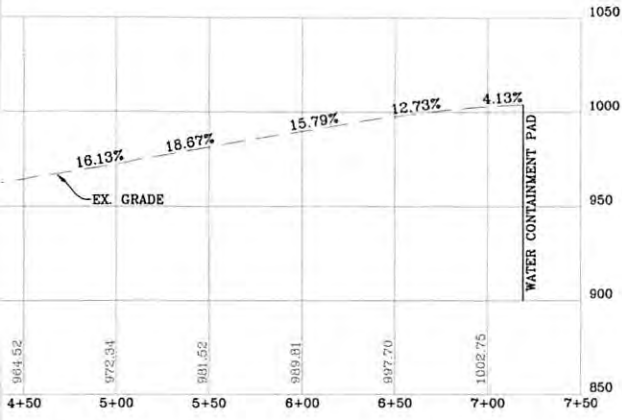


ACCESS ROAD "A" AS-BUILT
SCALE: HORIZ. 1" = 50' VERT. 1" = 10'



WELL PAD AS-BUILT CROSS-SECTION "A-A"
SCALE: HORIZ. 1" = 50' VERT. 1" = 10'

PROFILE, WELL PAD & WATER CONTAINMENT PAD AS-BUILT SECTIONS

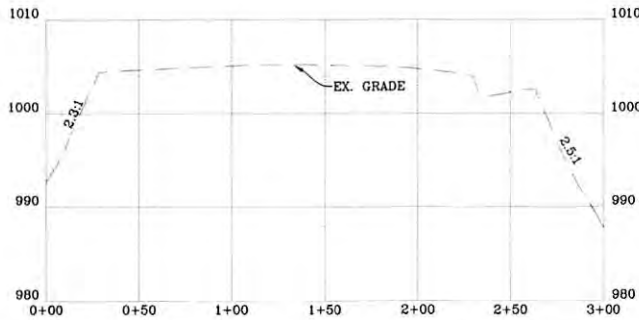


T PROFILE
50'

RECEIVED
Office of Oil and Gas

AUG 6 2018

WV Department of
Environmental Protection



WATER CONTAINMENT PAD AS-BUILT CROSS-SECTION "B-B"

SCALE: HORIZ. 1" = 50' VERT. 1" = 10'



REVISION

DATE



THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

ACCESS ROAD AS-BUILT PROFILE, WELL PAD &
WATER CONTAINMENT PAD AS-BUILT SECTIONS
WEEKLEY TRUST
WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

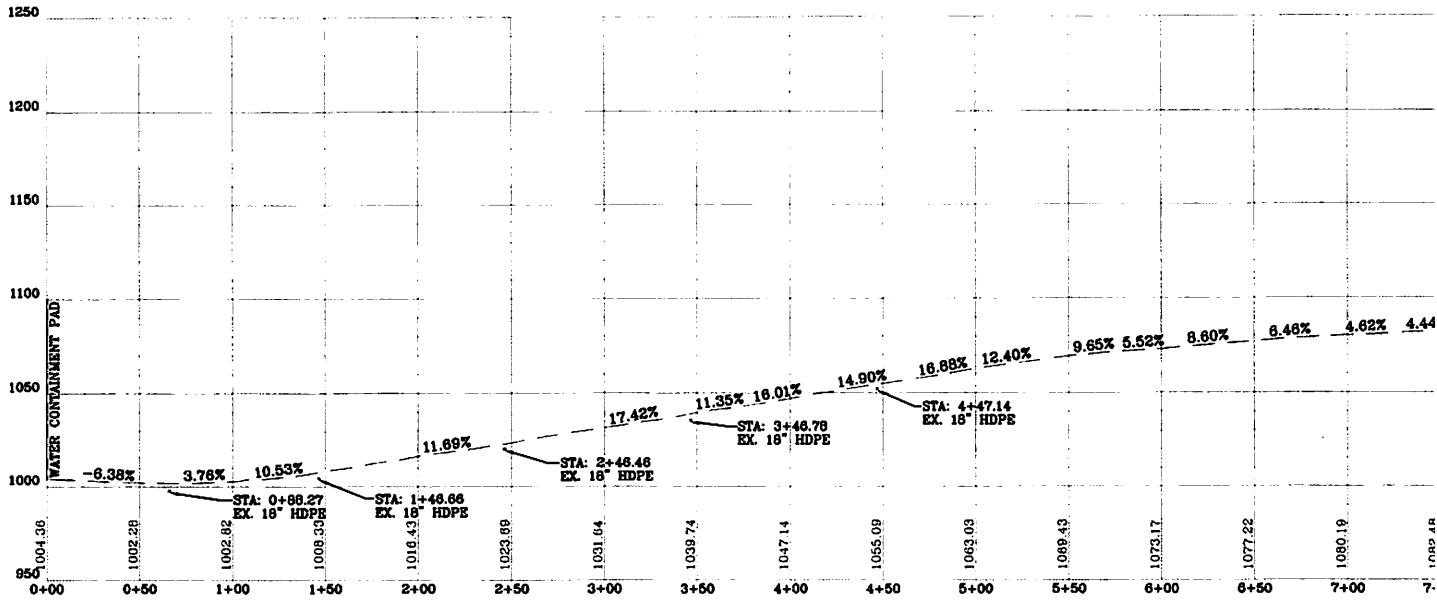


DATE: 03/05/2018

SCALE: AS SHOWN

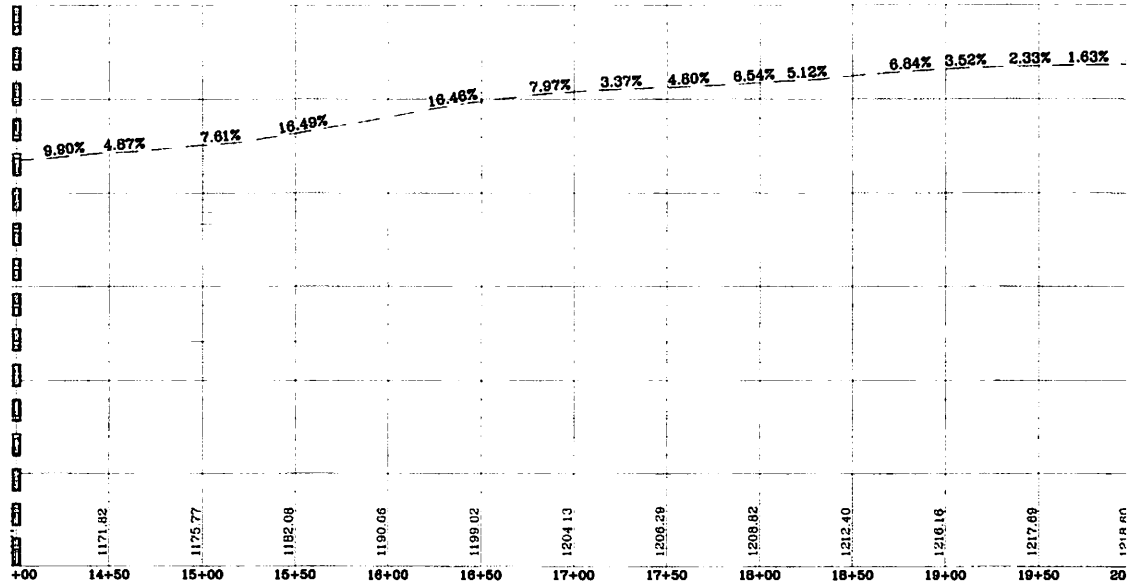
SHEET 7 OF 9

ACCESS ROAD AS-BU



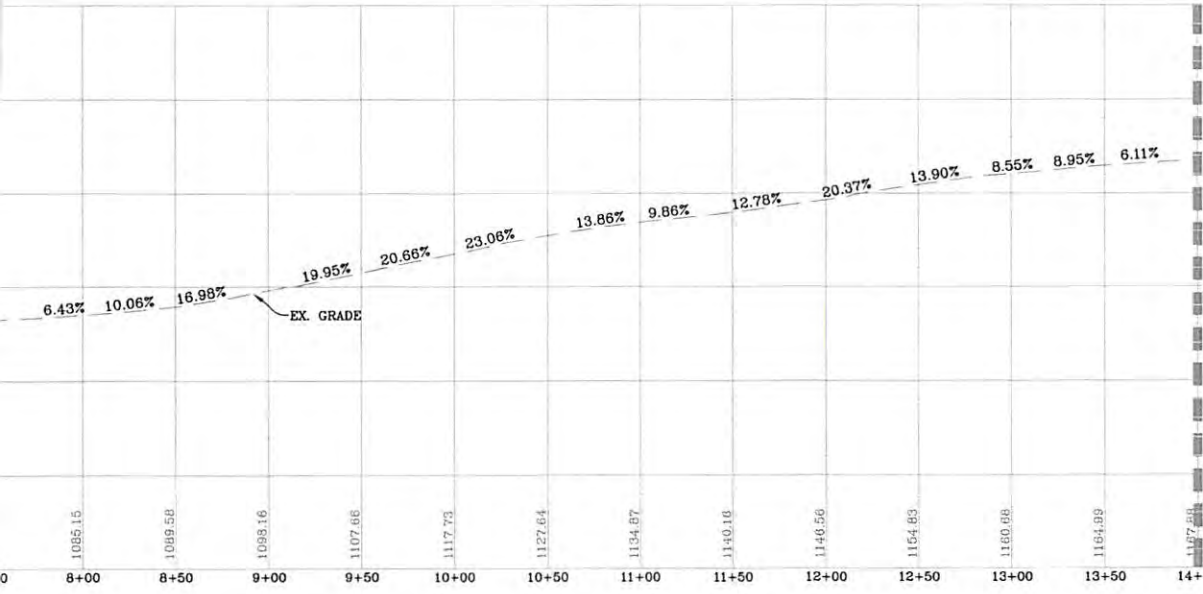
ACCESS ROAD "B" AS-BU
SCALE: HORIZ. 1" = 50' VERT.

MATCHLINE
SEE ABOVE



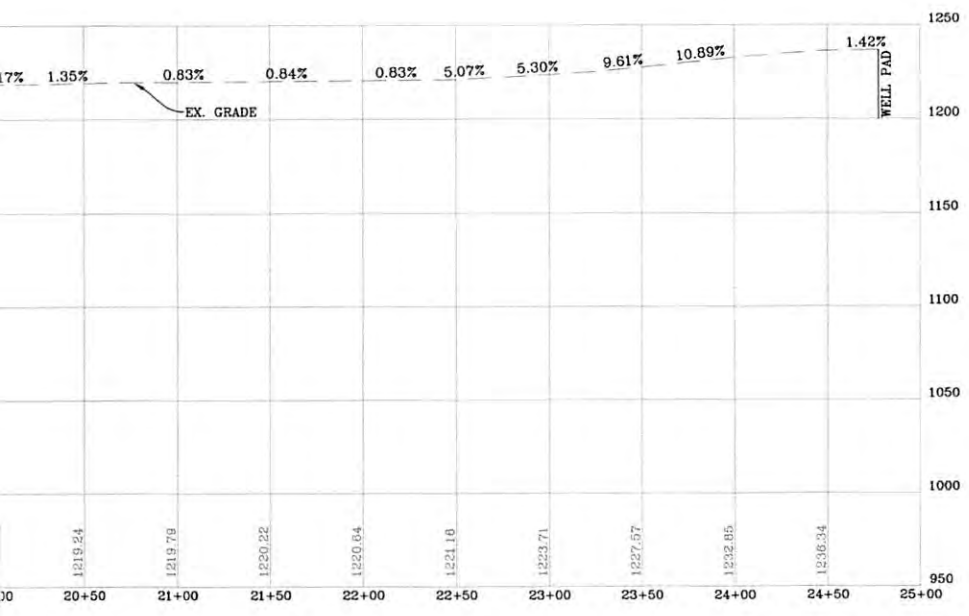
ACCESS ROAD "B" AS-BU
SCALE: HORIZ. 1" = 50' VERT.

BUILT PROFILE



MATCHLINE
SEE BELOW

LT PROFILE
= 50'



LT PROFILE
= 50'

NAVITUS
ENERGY ENGINEERING
Telephone: (888) 682-4185 | www.NavitusEng.com

REVISION	DATE

Antero
Resources

THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

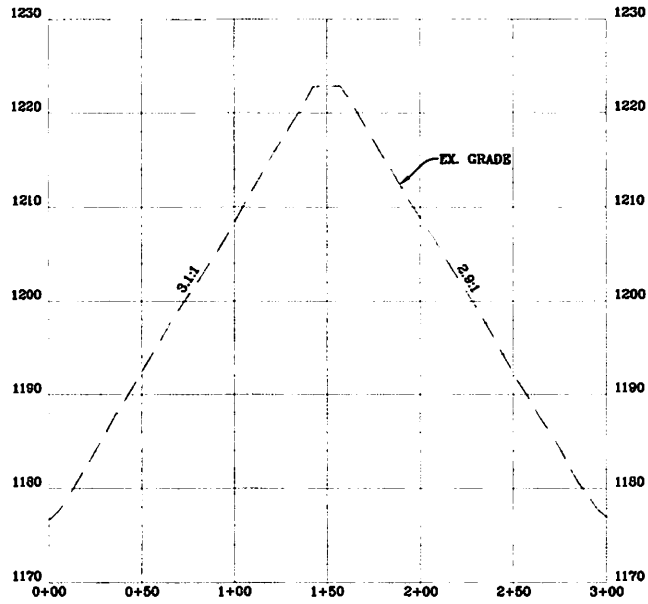
ACCESS ROAD AS-BUILT PROFILE
WEEKLEY TRUST
WELL PAD & WATER CONTAINMENT PAD
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

REGISTERED PROFESSIONAL ENGINEER
WEST VIRGINIA
1957
03/05/2018

DATE: 03/05/2018
SCALE: AS SHOWN
SHEET 8 OF 9

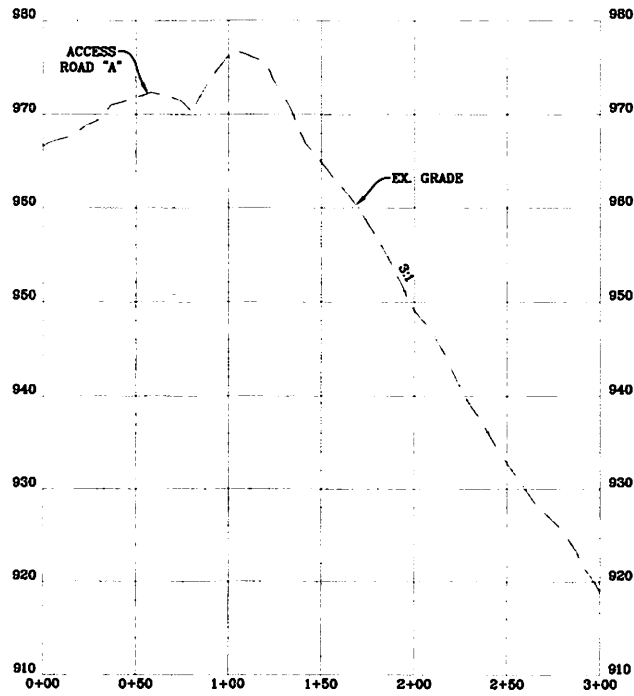
RECEIVED
Office of Oil and Gas
AUG 6 2018
WV Department of
Environmental Protection

STOCKPILE AS-BUILT



STOCKPILE AREA "B" AS-BUILT CROSS-SECTION "D-D"

SCALE: HORIZ. 1" = 50' VERT. 1" = 10'



STOCKPILE AREA "A" AS-BUILT CROSS-SECTION "C-C"

SCALE: HORIZ. 1" = 50' VERT. 1" = 10'

