

Commercial/Industrial Floodplain Development Permit

Doddridge County, WV Floodplain Management

This permit has been issued to ANTERO RESOURCES , and is for the approved commercial and/or industrial development project associated with this permit that impacts the FEMA-designated floodplain and/or floodway of Doddridge County, WV, pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance. This permit must be posted at the site of work as to be clearly visible, and must remain posted during entirety of development.

Permit: #14-238 Lemley Centralized Freshwater Impoundment

Date Approved: 07/10/2014

Expires: N/A

Issued to: ANTERO RESOURCES

**POC: Emily Kijowski
303-357-7232**

**Company Address: 1615 WYNKOOP ST
DENVER, CO**

Project Address: Grant District

Lat/Long: 39.324698N/80.686529W

Purpose of development: Freshwater Impoundment. Project does NOT impact floodplain.

Issued by: Edwin L. "Bo" Wriston, Doddridge County FPM (or designee)

Date: 07/10/2014

For additional information regarding this permit, please contact
Doddridge County Floodplain Manager at 304.873.2631, or via email at
doddridgecountyfpm@gmail.com
118 East Court Street; West Union, WV 26456

Legal Advertisement:
Doddridge County
Floodplain Permit Application

Please take notice that on the 2nd day of July, 2014

Antero Resources

filed an application for a Floodplain Permit to develop land located at or about:

Grant District 39.324698N / 80.686529W

Permit #14-238 Lemley Centralized Freshwater Impoundment

(Note: This project is not within the floodplain)

The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours. As this project is outside the FEMA identified floodplain of Doddridge County, Doddridge County Floodplain Management has no regulatory authority.

Any interested persons who desire to comment shall present the same in writing by **August 4, 2014**, delivered to:

Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston. Doddridge County Flood Plain Manager

#14-238

FILED

2014 JUL -2 AM 11:05

BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV



Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

June 27, 2014

Doddridge County Commission
Attn: Bo Wriston, Doddridge County Floodplain Manager
118 East Court Street, Room 102
West Union, WV 26456

Mr. Wriston:

Antero Resources Appalachian Corporation (Antero) would like to submit a Doddridge County Floodplain permit application for our Lemley Centralized Fresh Water Impoundment. Our project is located in Doddridge County, Grant District and per FIRM maps #54017C0135C and #54017C0130C, this location is not within the floodplain.

Attached you will find the following:

- Doddridge County Floodplain Permit Application
- Lemley Construction Plans
- FIRM Map
- WV Flood Tool Map

If you have any questions please feel free to contact me at (303) 357-7232.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Emily Kijowski".

Emily Kijowski
Permit Representative
Antero Resources Appalachian Corporation

Enclosures

**DODDRIDGE COUNTY
FLOODPLAIN DEVELOPMENT PERMIT APPLICATION**

SECTION 1: GENERAL PROVISIONS (APPLICANT TO READ AND SIGN)

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Compliance is issued.
5. The permit will expire if no work is commenced within six months of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal requirements.
7. Applicant hereby gives consent to the Floodplain Administrator/Manager or his/her representative to make inspections to verify compliance.
8. **I, THE APPLICANT CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.**

APPLICANT'S SIGNATURE _____



DATE June 30, 2014

SECTION 2: PROPOSE DEVELOPMENT (TO BE COMPLETED BY APPLICANT).

IF THE APPLICANT IS NOT A NATURAL PERSON, THE NAME, ADDRESS, AND TELEPHONE NUMBER OF A NATURAL PERSON WHO SHALL BE APPOINTED BY THE APPLICANT TO RECEIVE NOTICE PURSUANT TO ANY PROVISION OF THE CURRENT DODDRIDGE COUNTY FLOODPLAIN ORDINANCE.

APPLICANT'S NAME: Antero Midstream LLC - Randy Kloberdanz,

ADDRESS: 1615 Wynkoop Street, Denver, CO 80202

TELEPHONE NUMBER: Contact Emily Kijowski: (303)-357-7232

BUILDER'S NAME: Antero Midstream LLC

ADDRESS: 1615 Wynkoop Strett, Denver, CO 80202

TELEPHONE NUMBER: (303)-357-7310

ENGINEER'S NAME: Navitus Engineering, Inc

ADDRESS: 151 Windy Hill Lane, Winchester, Virginia 22602

TELEPHONE NUMBER: (888)-662-4185

PROJECT LOCATION:

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) Please see attached Firm map with landowner tabulation

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) Please see attached Firm map with landowner tabulation

DISTRICT: Grant

DATE/FROM WHOM PROPERTY

PURCHASED: N/A

LAND BOOK DESCRIPTION: Please see attached Firm map with landowner tabulation

DEED BOOK REFERENCE: Please see attached Firm map with landowner tabulation

TAX MAP REFERENCE: Please see attached Firm map with landowner tabulation

EXISTING BUILDINGS/USES OF PROPERTY: None

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY Please see attached Firm map with landowner tabulation

ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY _____

To avoid delay in processing the application, please provide enough information to easily identify the project location.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

ACTIVITY

STRUCTURAL TYPE

- | | | | |
|-------------------------------------|-------------------------|--------------------------|----------------------------------|
| <input checked="" type="checkbox"/> | New Structure | <input type="checkbox"/> | Residential (1 – 4 Family) |
| <input type="checkbox"/> | Addition | <input type="checkbox"/> | Residential (more than 4 Family) |
| <input type="checkbox"/> | Alteration | <input type="checkbox"/> | Non-residential (floodproofing) |
| <input type="checkbox"/> | Relocation | <input type="checkbox"/> | Combined Use (res. & com.) |
| <input type="checkbox"/> | Demolition | <input type="checkbox"/> | Replacement |
| <input type="checkbox"/> | Manufactured/Mobil Home | | |

B. OTHER DEVELOPMENT ACTIVITIES:

- | | | | | | | | |
|-------------------------------------|--|--------------------------|--------|--------------------------|----------|--------------------------|------------|
| <input checked="" type="checkbox"/> | Fill | <input type="checkbox"/> | Mining | <input type="checkbox"/> | Drilling | <input type="checkbox"/> | Pipelining |
| <input checked="" type="checkbox"/> | Grading | | | | | | |
| <input type="checkbox"/> | Excavation (except for STRUCTURAL DEVELOPMENT checked above) | | | | | | |
| <input type="checkbox"/> | Watercourse Alteration (including dredging and channel modification) | | | | | | |
| <input type="checkbox"/> | Drainage Improvements (including culvert work) | | | | | | |
| <input checked="" type="checkbox"/> | Road, Street, or Bridge Construction | | | | | | |
| <input type="checkbox"/> | Subdivision (including new expansion) | | | | | | |
| <input type="checkbox"/> | Individual Water or Sewer System | | | | | | |
| <input type="checkbox"/> | Other (please specify) | | | | | | |
-

C. STANDARD SITE PLAN OR SKETCH

- 1. SUBMIT ALL STANDARD SITE PLANS, IF ANY HAVE BEEN PREPARED.**
- 2. IF STANDARD SITE PLANS HAVE NOT BEEN PREPARED:**
SKETCH ON A SEPARATE 8 ½ X 11 INCH SHEET OF PAPER THE SHAPE AND LOCATION OF THE LOT. SHOW THE LOCATION OF THE INTENDED CONSTRUCTION OR LAND USE INDICATING BUILDING SETBACKS, SIZE & HEIGHT. IDENTIFY EXISTING BUILDINGS, STRUCTURES OR LAND USES ON THE PROPERTY.
- 3. SIGN AND DATE THE SKETCH.**

ACTUAL TOTAL CONSTRUCTION COSTS OF THE COMPLETE DEVELOPMENT IRRESPECTIVE OF WHETHER ALL OR ANY PART OF THE SUBJECT PROPOSED CONSTRUCTION PROJECT IS WITHIN THE FLOODPLAIN \$ N/A - Project is not located within the floodplain

D. ADJACENT AND/OR AFFECTED LANDOWNERS:

1. NAME AND ADDRESS OF ALL OWNERS OF SURFACE TRACTS ADJACENT TO THE AREA OF THE SURFACE TRACT (UP & DOWN STREAM) UPON WHICH THE PROPOSED ACTIVITY WILL OCCUR AND ALL OTHER SURFACE OWNERS UP & DOWN STREAM) WHO OWN PROPERTY THAT MAY BE AFFECTED BY FLOODING AS IS DEMONSTRATED BY A FLOODPLAIN STUDY OR SURVEY (IF ONE HAS BEEN COMPLETED).

NAME: <u>N/A - No properties sharing an</u>	NAME: _____
ADDRESS: <u>immediate common boundary up</u>	ADDRESS: _____
<u>or down stream due to the location</u>	_____
<u>not being in floodplain</u>	_____
NAME: _____	NAME: _____
ADDRESS: _____	ADDRESS: _____
_____	_____

1. NAME AND ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON ANY ADJACENT PROPERTY AT THE TIME THE FLOODPLAIN PERMIT APPLICATION IS FILED AND THE NAME AND ADDRESS OF AT LEAST ONE ADULT RESIDING IN ANY HOME ON ANY PROPERTY THAT MAY BE AFFECTED BY FLOODING AS IS DEMONSTRATED BY A FLOODPLAIN STUDY OR SURVEY.

NAME: <u>N/A - No properties sharing an</u>	NAME: _____
ADDRESS: <u>immediate common boundary up</u>	ADDRESS: _____
<u>or down stream due to the location</u>	_____
<u>not being in floodplain</u>	_____
NAME: _____	NAME: _____
ADDRESS: _____	ADDRESS: _____
_____	_____

E. CONFIRMATION FORM

THE APPLICANT ACKNOWLEDGES, AGREES, AND CONFIRMS THAT HE/IT WILL PAY WITHIN 30 DAYS OF RECEIPT OF INVOICE BY THE COUNTY FOR ALL EXPENSES RELATIVE TO THE PERMIT APPLICATION PROCESS GREATER THAN THE REQUIRED DEPOSIT FOR EXPENSES INCLUDING:

- (A) PERSONAL SERVICE OF PROCESS BY THE DODDRIDGE COUNTY SHERIFF AT THE RATES PERMITTED BY LAW FOR SUCH SERVICE.
- (B) SERVICE BY CERTIFIED MAIL RETURN RECEIPT REQUESTED.
- (C) PUBLICATION.

- (D) COURT REPORTING SERVICES AT ANY HEARINGS REQUESTED BY THE APPLICANT.
- (E) CONSULTANTS AND/OR HEARING EXPERTS UTILIZED BY DODDRIDGE COUNTY FLOODPLAIN ADMINISTRATOR/MANAGER OR FLOODPLAIN APPEALS BOARD FOR REVIEW OF MATERIALS AND/OR TESTIMONY REGARDING THE EFFICACY OF GRANTING OR DENYING THE APPLICANT'S FLOODPLAIN PERMIT.

NAME (PRINT): Randy Kloberdanz

SIGNATURE: *RK* DATE: 6/30/14

After completing SECTION 2, APPLICANT should submit form to Floodplain Administrator/Manager or his/her representative for review.

SECTION 3: FLOODPLAIN DETERMINATION (to be completed by Floodplain Administrator/Manager or his/her representative)

THE PROPOSED DEVELOPMENT:

THE PROPOSED DEVELOPMENT IS LOCATED ON:

FIRM Panel: _____

Dated: _____

Is **NOT** located in a Specific Flood Hazard Area (Notify applicant that the application review is complete and **NO FLOODPLAIN DEVELOPMENT PERMIT IS REQUIRED**).

Is located in Special Flood Hazard Area.

FIRM zone designation _____

100-Year flood elevation is: _____ NGVD (MSL)

Unavailable

The proposed development is located in a floodway.

FBFM Panel No. _____

Dated _____

See section 4 for additional instructions.

SIGNED _____

DATE _____

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by Floodplain Administrator/Manager or his/her representative)

The applicant must submit the documents checked below before the application can be processed.

- A plan showing the location of all existing structures, water bodies, adjacent roads, lot dimensions and proposed development.

- Development plans, drawn to scale, and specifications, including where applicable: details for anchoring structures, storage tanks, proposed elevation of lowest floor, (including basement or crawl space), types of water resistant materials used below the first floor, details of flood proffing of utilities located below the first floor and details of enclosures below the first floor. Also _____

- Subdivision or other development plans (If the subdivision or development exceeds 50 lots or 5 acres, whichever is the lesser, the applicant must provide 100-year flood elevations if they are not otherwise available).

- Plans showing the extent of watercourse relocation and/or landform alterations.

- Top of new fill elevation _____ Ft. NGVD (MSL).
For floodproofing structures applicant must attach certification from registered engineer or architect.

- Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the 100-year flood. A copy of all data and calculations supporting this finding must also be submitted.

- Manufactured homes located in a floodplain area must have a West Virginia Contractor's License and a Manufactured Home Installation License as required by the Federal Emergency Management Agency (FEMA).

Other:

SECTION 5: PERMIT DETERMINATION (To be completed by Floodplain Administrator/Manager or his/her representative)

I have determined that the proposed activity (type is or is not) in conformance with provisions of the Floodplain Ordinance adopted by the County Commission of Doddridge County on May 21, 2013. The permit is issued subject to the conditions attached to and made part of this permit.

SIGNED _____ DATE _____

If the Floodplain Administrator/Manager found that the above was not in conformance with the provisions of the Doddridge County Floodplain Ordinance and/or denied that application, the applicant may complete an appealing process below.

APPEALS: Appealed to the County Commission of Doddridge County? Yes No
Hearing Date: _____
County Commission Decision - Approved Yes No

CONDITIONS: _____

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT before Certificate of Compliance is issued).

The following information must be provided for project structures. This section must be completed by a registered professional engineer or a licensed land surveyor (or attach a certification to this application).

COMPLETE 1 OR 2 BELOW:

- 1 Actual (As-Built) Elevation of the top of the lowest floor (including basement or crawl space is _____ FT. NGVD (MSL)
- 2 Actual (As Built) elevation of floodproofing is _____ FT. NGVD (MSL)

Note: Any work performed prior to submittal of the above information is at risk of the applicant.

SECTION 7: COMPLIANCE ACTION (To be completed by the Floodplain Administrator/Manager or his/her representative).

The Floodplain Administrator/Manager or his/her representative will complete this section as applicable based on inspection of the project to ensure compliance with the Doddridge County Floodplain Ordinance.

INSPECTIONS:

DATE: _____ BY: _____
DEFICIENCIES ? Y/N

COMMENTS _____

SECTION 8: CERTIFICATE OF COMPLIANCE (To be completed by Floodplain Administrator/Manager or his/her representative).

Certificate of Compliance issued: DATE: _____ BY: _____

**CERTIFICATE OF COMPLIANCE
FOR DEVELOPMENT IN SPECIAL FLOOD HAZARD AREA
(OWNER MUST RETAIN)**

PERMIT NUMBER: _____

PERMIT DATE: _____

PURPOSE –

CONSTRUCTION LOCATION: _____

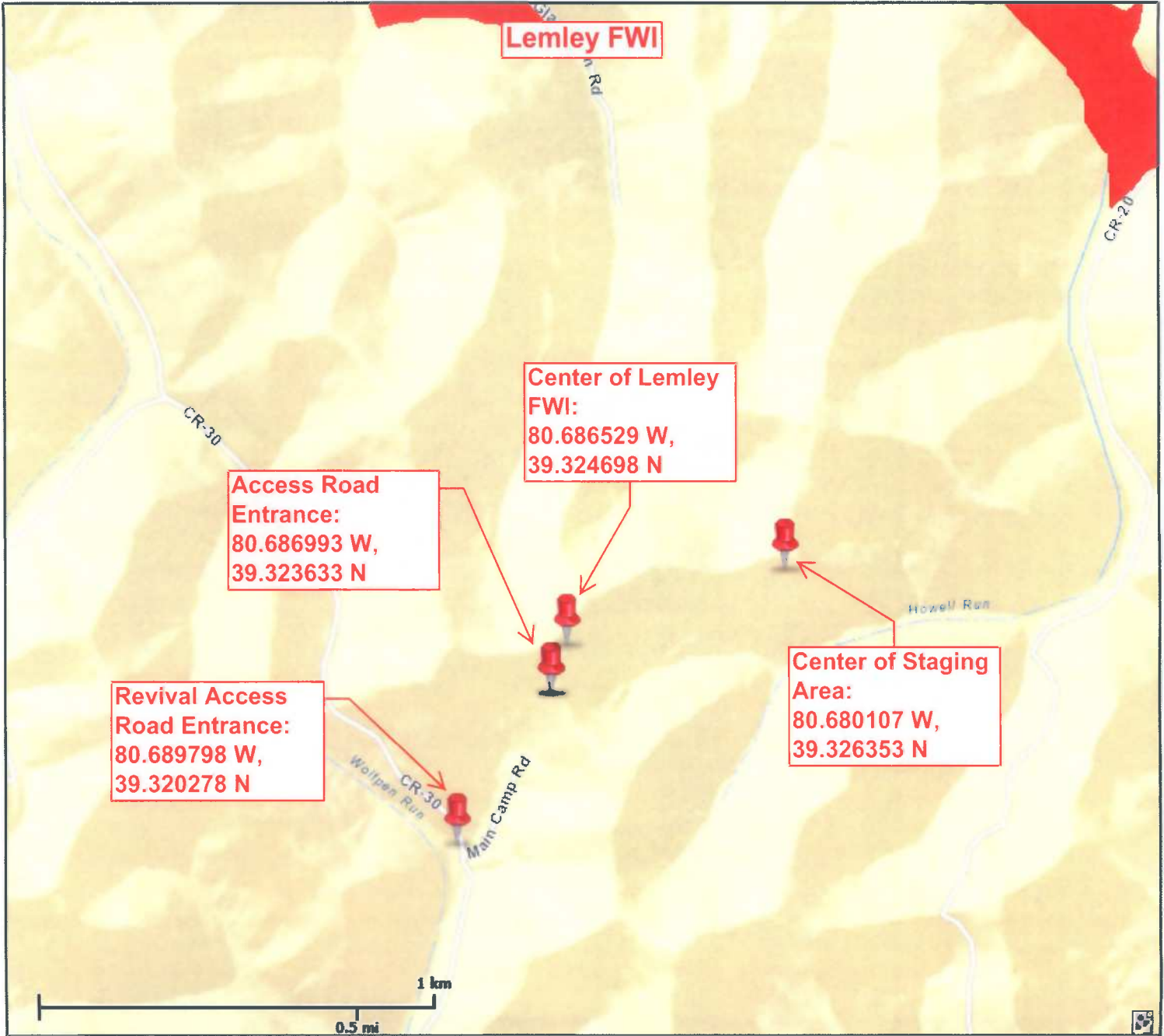
OWNER'S ADDRESS: _____

**THE FOLLOWING MUST BE COMPLETED BY THE FLOODPLAIN
ADMINISTRATOR/MANAGER OR HIS/HER AGENT.**

**COMPLIANCE IS HEREBY CERTIFIED WITH THE REQUIREMENT OF THE
FLOODPLAIN ORDINANCE ADOPTED BY THE COUNTY COMMISSION OF
DODDRIDGE COUNTY ON MAY 21, 2013.**


SIGNED _____ **DATE** _____


WV Flood Map



This map is not the official regulatory FIRM or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

Map Created on 6/27/2014

 Location of the mouse click

 **Flood Hazard Zone**
(1% annual chance floodplain)

User Notes:

Disclaimer:
The online map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. To obtain more detailed information in areas where Base Flood Elevations have been determined, users are encouraged to consult the latest Flood Profile data contained in the official flood insurance study. These studies are available online at www.msc.fema.gov.

WV Flood Tool is supported by FEMA, WV NFIP Office, and WV GIS Technical Center
(<http://www.MapWV.gov/flood>)

Flood Hazard Area:
Elevation: About 1341 feet
Location (long, lat): 80.624619 W, 39.224515 N
Location (UTM 17N): (532402, 4341759)
FEMA Issued Flood Map: 54017C0255C
Contacts: Doddridge County
CRS Information: N/A
Parcel Number:

STATE OF WEST VIRGINIA,
COUNTY OF DODDRIDGE, TO WIT

I, Virginia Nicholson, Editor of THE
HERALD RECORD, a weekly newspaper
published regularly, in Doddridge County,
West Virginia, Do Hereby Certify Upon
Oath That the Accompanying Legal Notice
Entitled:

Floodplain Permit
14-238

Lemley Impoundment

was published in said paper for *2*

successive weeks beginning with the issue
of *July 15th* 2014 and
ending with the issue of

July 22nd 2014 and
that said notice contains *189*

WORD SPACE at *115* cents a word
amounts to the sum of \$ *21.74*

FOR FIRST PUBLICATION, SECOND
PUBLICATION IS 75% OF THE FIRST
PUBLICATION

\$ *16.31*
and each publication thereafter

\$ *38.05* TOTAL

EDITOR

Virginia Nicholson

SWORN TO AND SUBSCRIBED

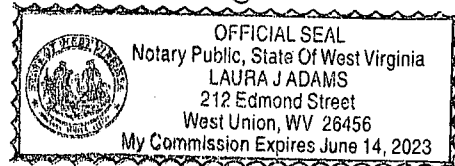
BEFORE ME THIS THE *24th* DAY
OF *July* 2014

NOTARY PUBLIC

Laura J Adams

LEGAL ADVERTISEMENT:
Doddridge County,
Floodplain Permit Application
Please take notice that on the 2nd day of July, 2014
Antero Resources filed an application for a Floodplain
Permit to develop land located at or about: Grant District
39.324698N/80.686529W, Permit #14-238 Lemley,
Centralized Freshwater Impoundment
(Note: This project is not within the floodplain)
The Application is on file with the Clerk of the County
Court and may be inspected or copied during regular
business hours. As this project is outside the FEMA
identified floodplain of Doddridge County, Doddridge
County Floodplain Management has no regulatory
authority. Any interested persons who desire to comment
shall present the same in writing by August 4, 2014.
Delivered to the
Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A. Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston, Doddridge County Flood Plain
Manager

7-15-2xb



FIRM EXHIBIT

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0130C

FIRM
FLOOD INSURANCE RATE MAP
DODDRIDGE COUNTY,
WEST VIRGINIA
AND INCORPORATED AREAS

PANEL 130 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY: DODDRIDGE COUNTY
NUMBER: 54004
PANEL: 0130
SUFFIX: C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
54017C0130C
MAP REVISED
OCTOBER 4, 2011

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0135C

FIRM
FLOOD INSURANCE RATE MAP
DODDRIDGE COUNTY,
WEST VIRGINIA
AND INCORPORATED AREAS

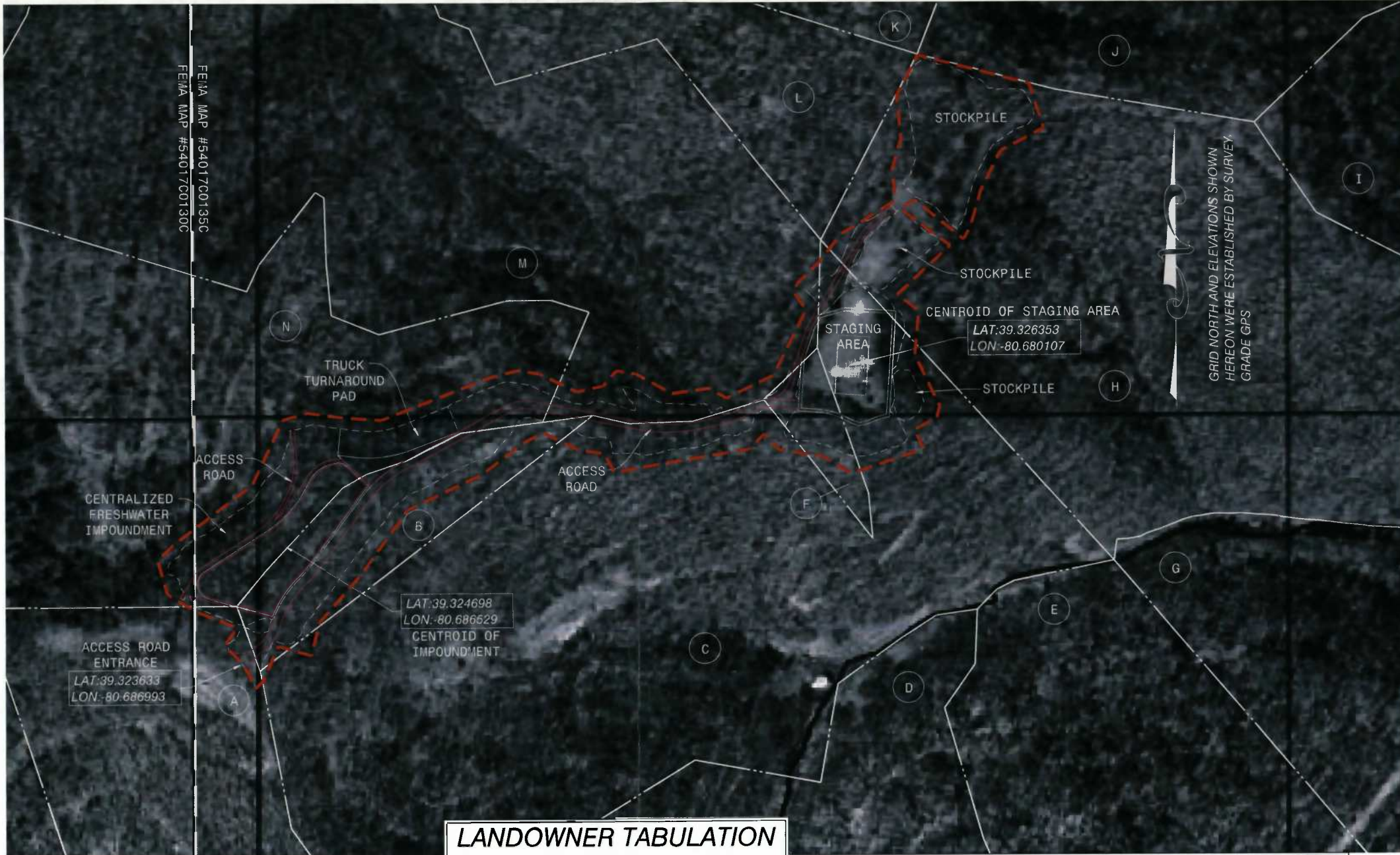
PANEL 135 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY: DODDRIDGE COUNTY
NUMBER: 54004
PANEL: 0135
SUFFIX: C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

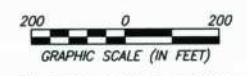
MAP NUMBER
54017C0135C
MAP REVISED
OCTOBER 4, 2011

Federal Emergency Management Agency



LANDOWNER TABULATION

A	TM 13-10 MT. SALEM REVIVAL GROUNDS, INC. DB 206 PG 428 43.13 ACRES P.O. BOX 177 WEST UNION, WV 26456	D	TM 13-11.1 JEFFERY D. HILL & CRAIG A. HILL DB 284 PG 011 66.5 ACRES NO ADDRESS	G	TM 14-43 DANNY J. & LINDA K. MARSHALL DB 216 PG 543 31.75 ACRES RT 2 BOX 190 WEST UNION, WV 26456	J	TM 10-25 DENNIS S. POWELL DB 244 PG 548 118.28 ACRES RT 2 BOX 183A WEST UNION, WV 26456	M	TM 13-5 HFP, LLC DB 283 PG 503 65 ACRES P.O. BOX 418 KENOVA, WV 25530
B	TM 13-11.3 JEFFERY D. HILL & CRAIG A. HILL DB 284 PG 011 5 ACRES NO ADDRESS	E	TM 13-20 DANNY J. & LINDA K. MARSHALL DB 216 PG 543 47.9 ACRES RT 2 BOX 190 WEST UNION, WV 26456	H	TM 13-11.2 JEFFERY D. & CRAIG A. HILL DB 284 PG 011 50 ACRES NO ADDRESS	K	TM 9-27 LINDA LOU & CRAIG GUY PHILLIPS DB 283 PG 453 146.55 ACRES NO ADDRESS	N	TM 13-10.1 MT. SALEM REVIVAL GROUNDS, INC. DB 206 PG 428 32.65 ACRES P.O. BOX 186 WEST UNION, WV 26456
C	TM 13-11 JEFFERY D. HILL & CRAIG A. HILL DB 284 PG 011 59 ACRES NO ADDRESS	F	TM 13-35 JEFFERY D. & CRAIG A. HILL DB 284 PG 011 2 ACRES NO ADDRESS	I	TM 14-44 DENNIS S. POWELL DB 244 PG 548 36.6 ACRES 53 LOOKOUT LANE PATASKALA, OH 43062	L	TM 9-34 HFP, LLC DB 283 PG 503 84.75 ACRES P.O. BOX 418 KENOVA, WV 25530		



FLOODPLAIN NOTE
THE PROPOSED SITE IS LOCATED IN FLOODZONE "X" PER FEMA FLOOD MAPS #54017C0135C & #54017C0130C.

NAVITUS
ENERGY ENGINEERING

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

REVISION	DATE

Antero Resources

THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

FIRM EXHIBIT

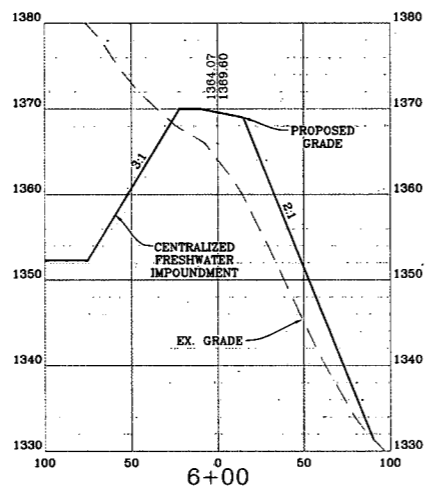
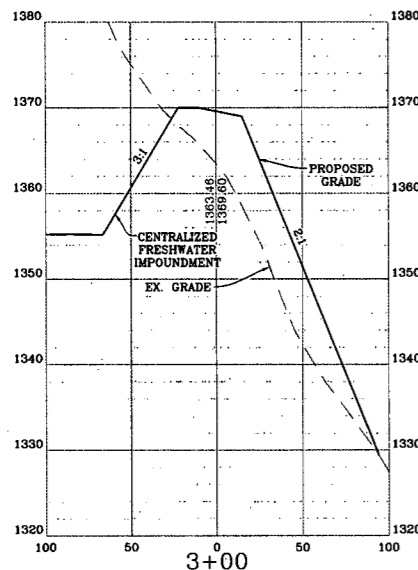
LEMLEY

CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



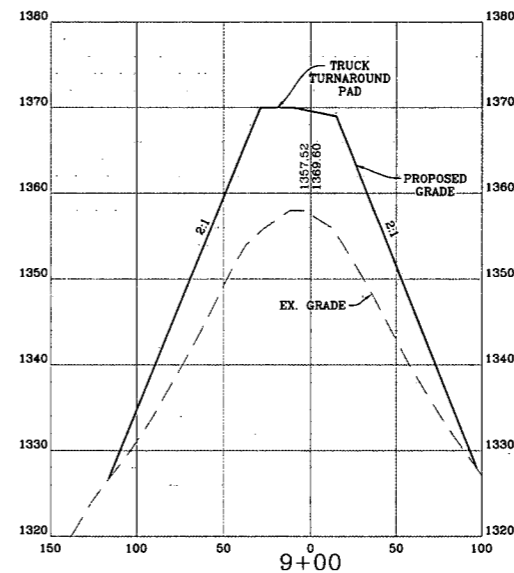
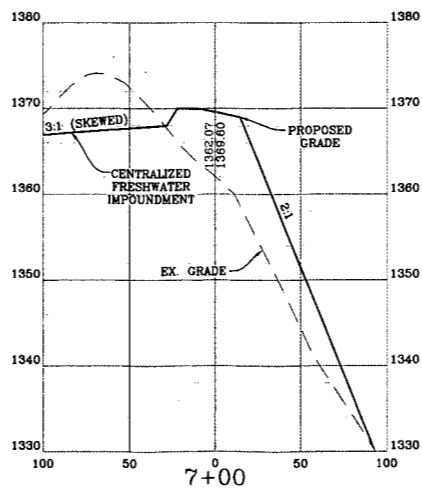
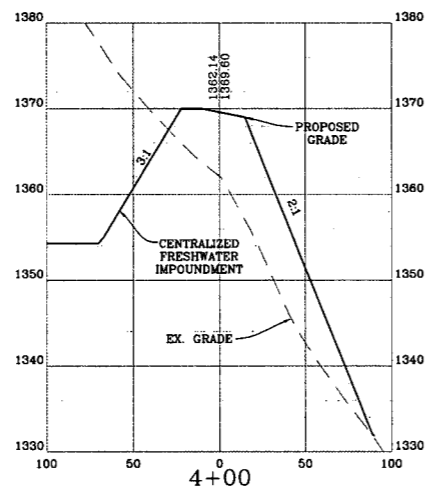
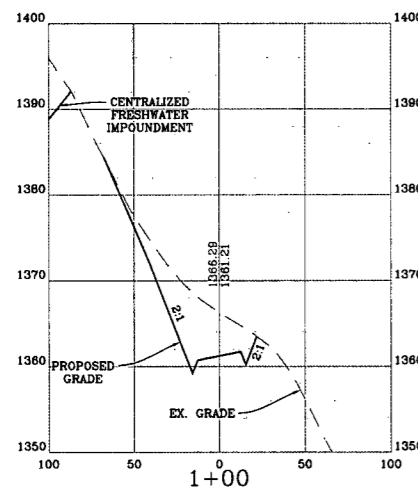
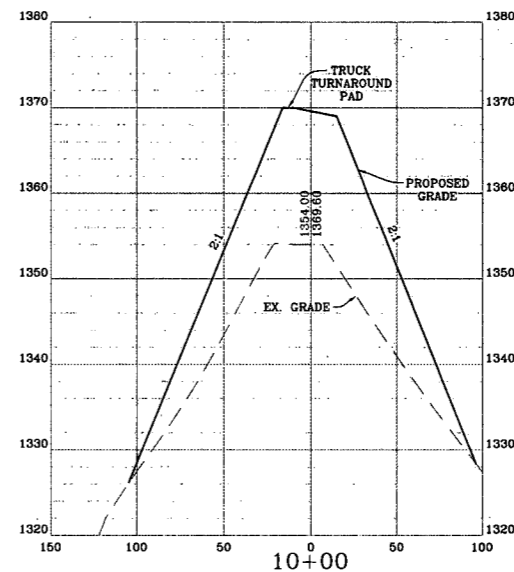
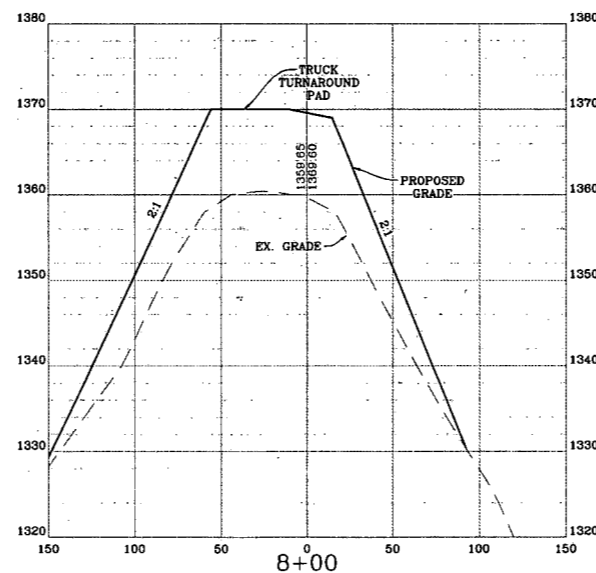
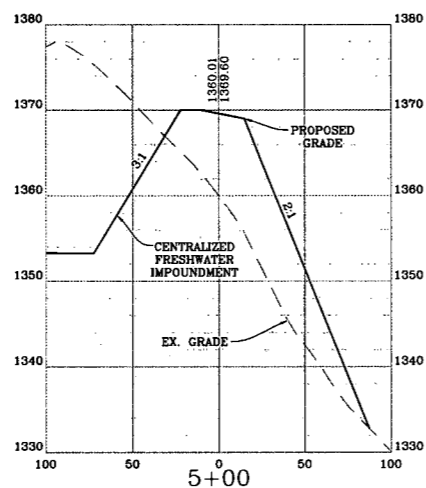
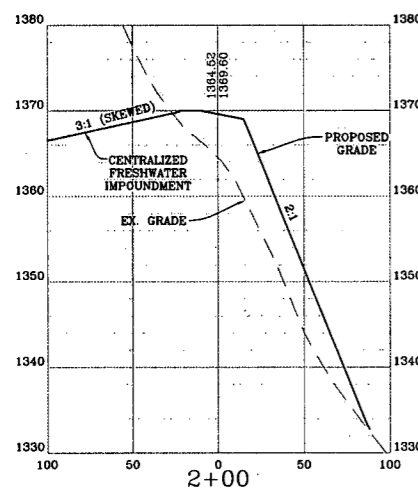
DATE: 02/27/2014
SCALE: 1" = 200'
SHEET 25 OF 25

ACCESS ROAD SECTIONS



ACCESS ROAD "A" CROSS-SECTIONS

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

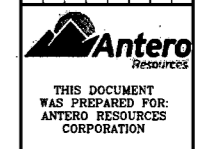


- NOTE:**
- ALL FILL AREAS, INCLUDING ACCESS ROADS AND EXCESS MATERIAL STOCKPILES, SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.
 - ALL CUT & FILL SLOPES SHALL BE 2:1 UNLESS STATED OTHERWISE.

LEGEND

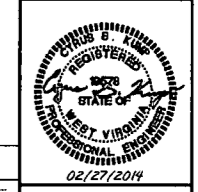
X-SECTION GRID INDEX	---
X-SECTION GRID INTERMEDIATE	---
X-SECTION PROPOSED GRADE	---
X-SECTION EXISTING GRADE	---
X-SECTION WATER SURFACE	---
MATCHLINE	---

REVISION	DATE



THIS DOCUMENT WAS PREPARED FOR: ANTERO RESOURCES CORPORATION

ACCESS ROAD SECTIONS
LEMLEY
 CENTRALIZED FRESHWATER IMPOUNDMENT
 GRANT DISTRICT
 DODDRIDGE COUNTY, WEST VIRGINIA



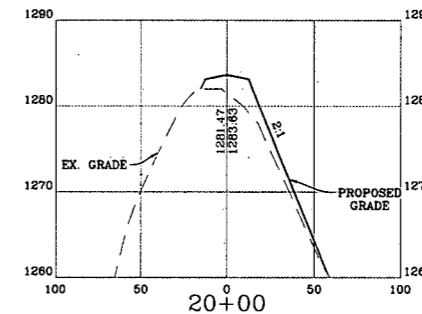
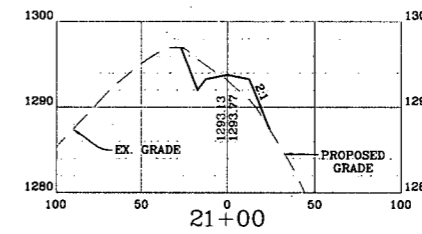
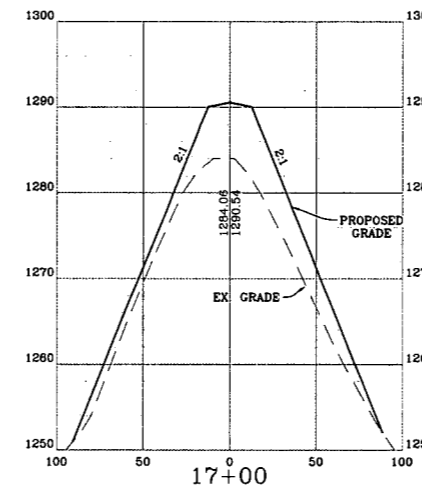
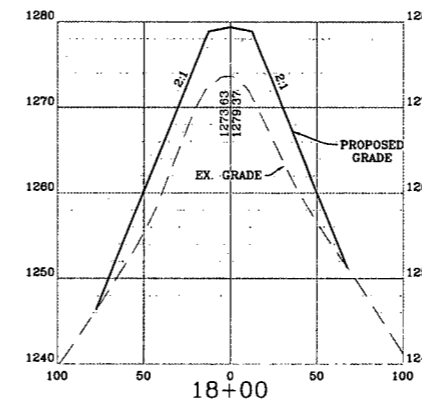
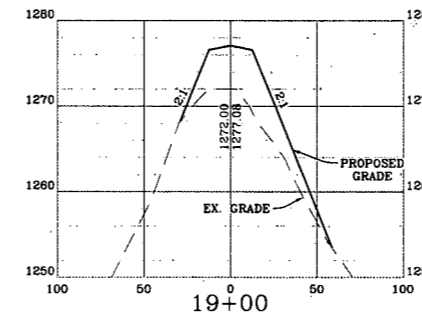
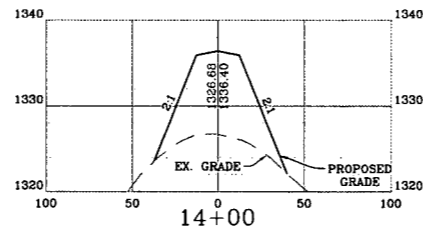
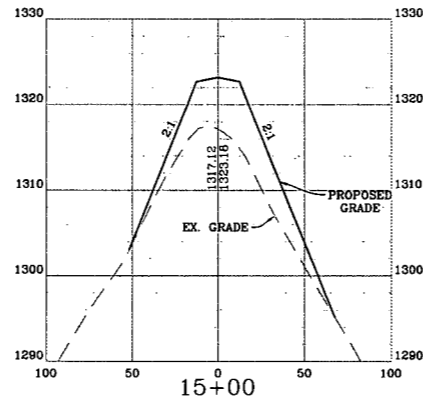
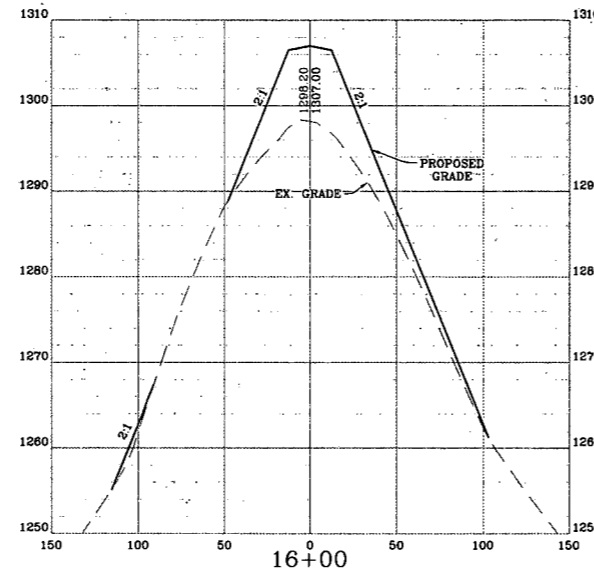
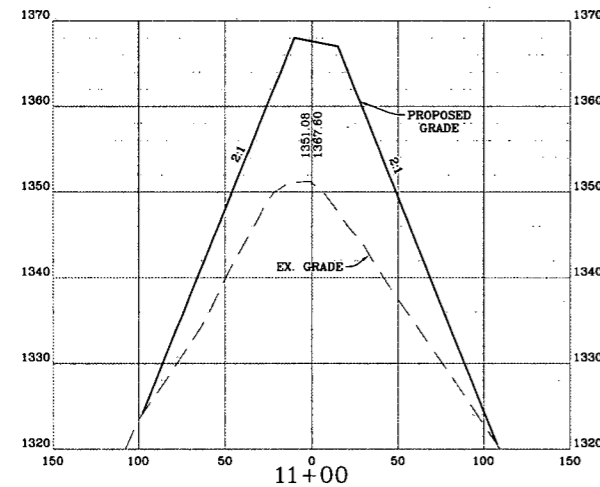
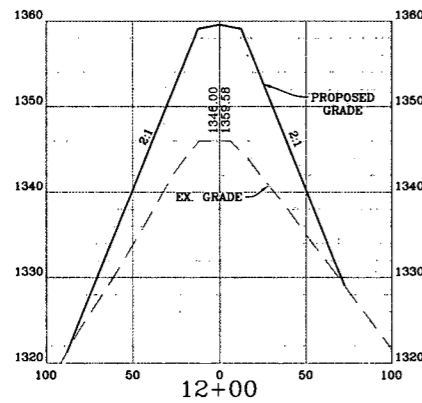
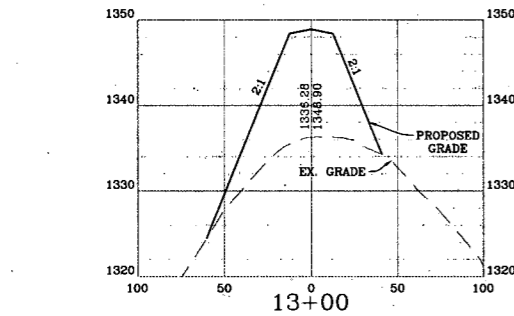
DATE: 02/27/2014
 SCALE: AS SHOWN
 SHEET 10 OF 25

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

ACCESS ROAD SECTIONS

ACCESS ROAD "A" CROSS-SECTIONS

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



NOTE:

- ALL FILL AREAS, INCLUDING ACCESS ROADS AND EXCESS MATERIAL STOCKPILES, SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.
- ALL CUT & FILL SLOPES SHALL BE 2:1 UNLESS STATED OTHERWISE.

LEGEND

- X-SECTION GRID INDEX
- X-SECTION GRID INTERMEDIATE
- X-SECTION PROPOSED GRADE
- X-SECTION EXISTING GRADE
- X-SECTION WATER SURFACE
- MATCHLINE

REVISION
DATE



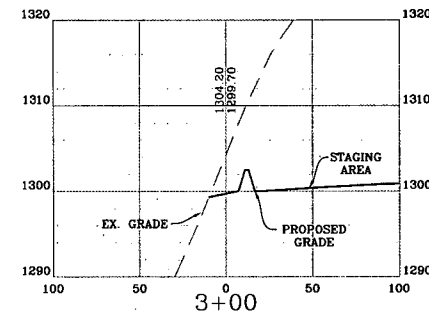
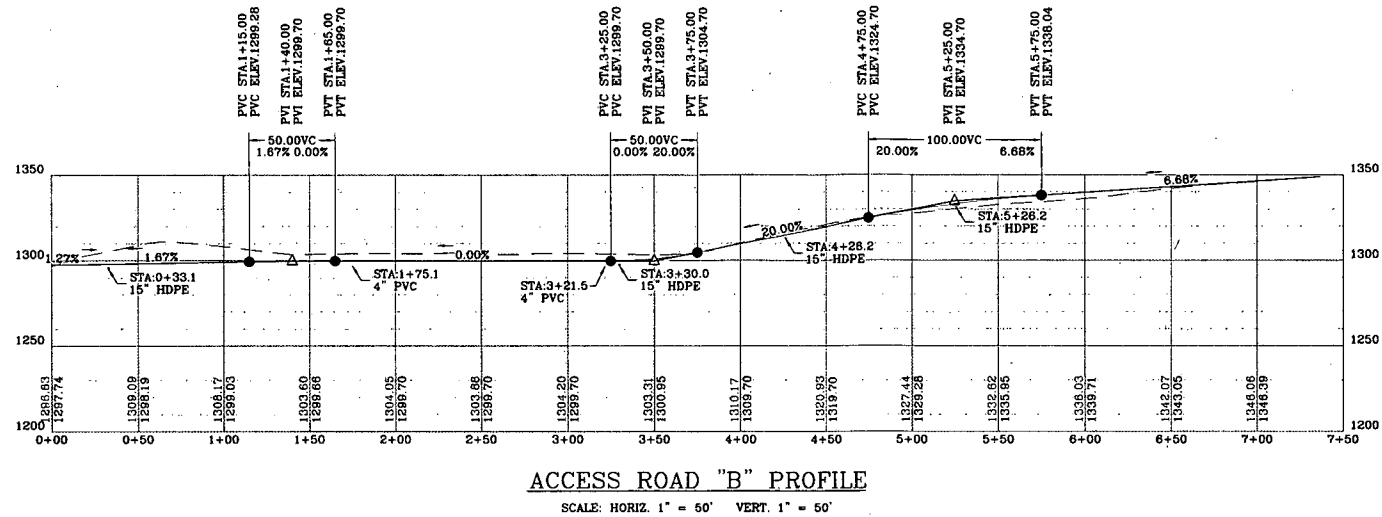
THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

ACCESS ROAD SECTIONS
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



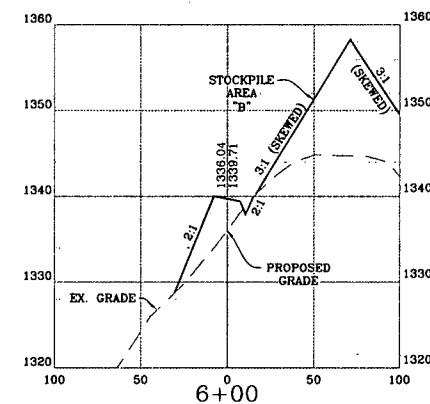
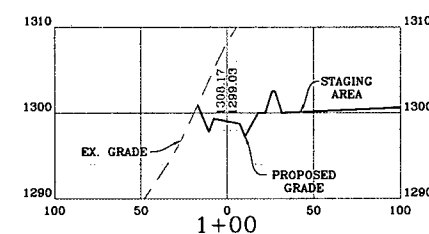
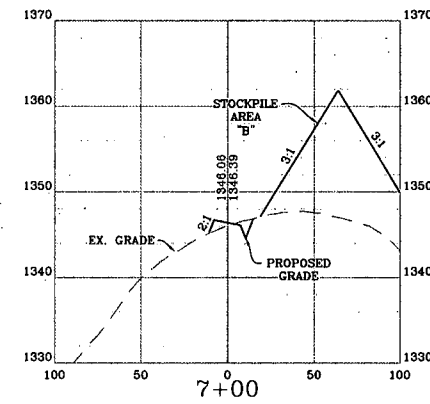
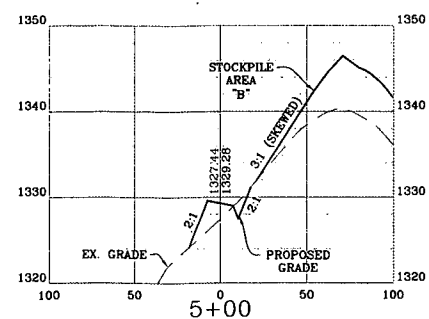
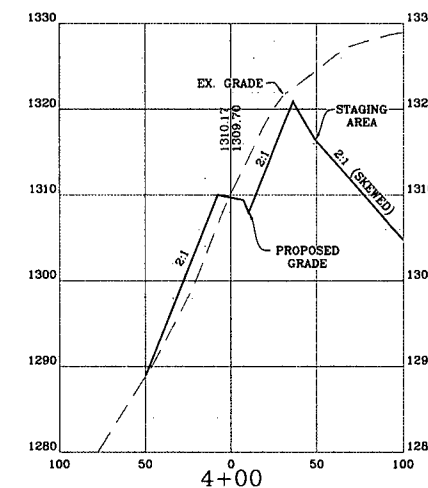
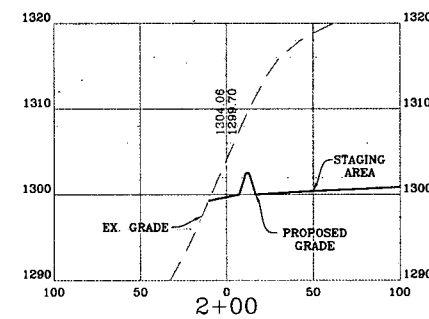
02/27/2014
DATE: 02/27/2014
SCALE: AS SHOWN
SHEET 11 OF 25

ACCESS ROAD PROFILE & SECTIONS



ACCESS ROAD "B" CROSS-SECTIONS

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



NOTE:
1. ALL FILL AREAS, INCLUDING ACCESS ROADS AND EXCESS MATERIAL STOCKPILES, SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.
2. ALL CUT & FILL SLOPES SHALL BE 2:1 UNLESS STATED OTHERWISE.

LEGEND

X-SECTION GRID INDEX	---
X-SECTION GRID INTERMEDIATE	---
X-SECTION PROPOSED GRADE	---
X-SECTION EXISTING GRADE	---
X-SECTION WATER SURFACE	---
MATCHLINE	---

REVISION	DATE



THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

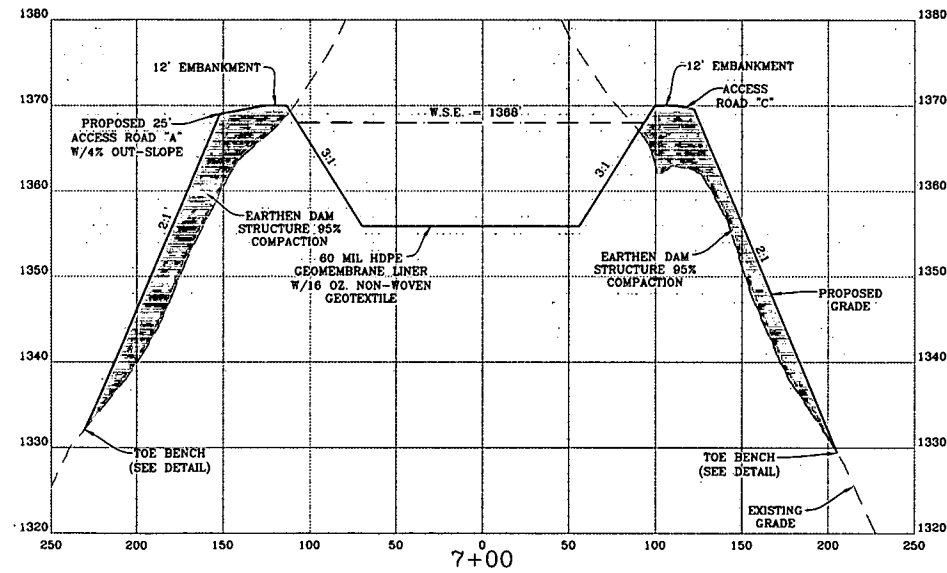
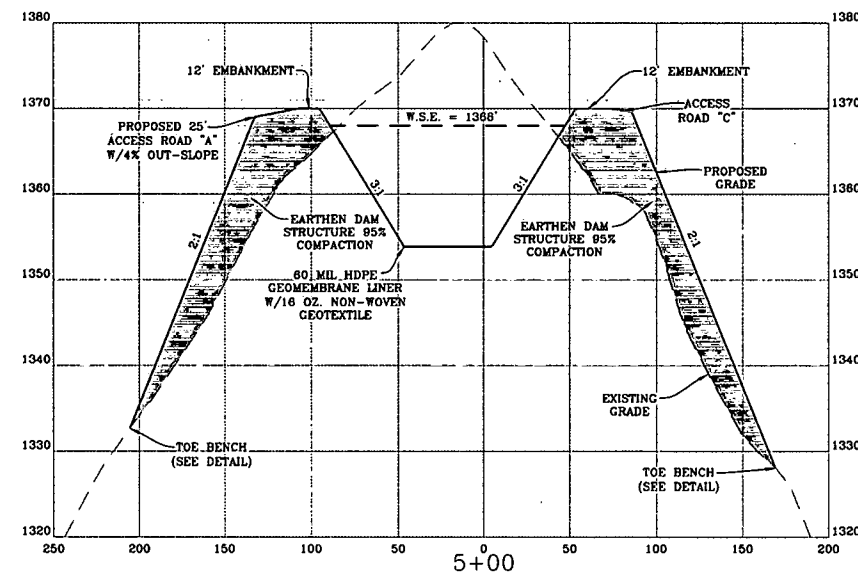
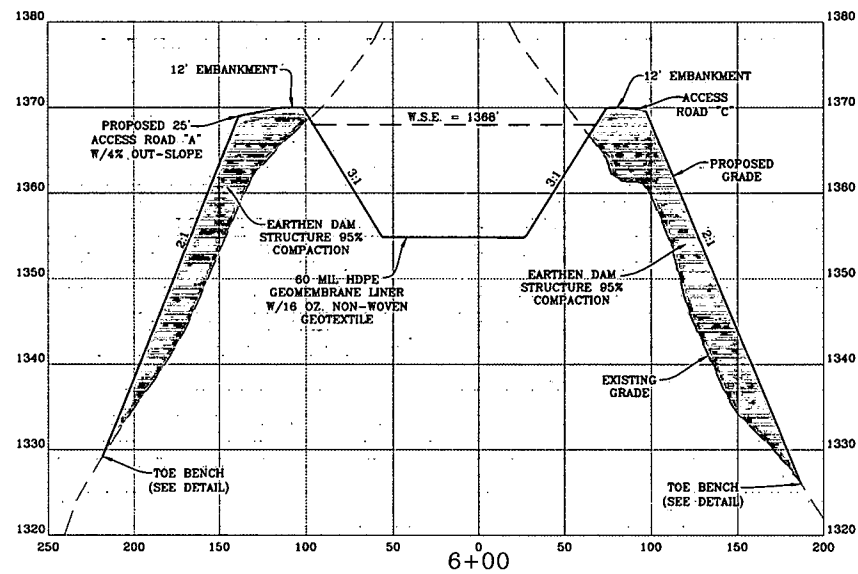
LEMLEY
ACCESS ROAD PROFILE & SECTIONS
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



CENTRALIZED FRESHWATER IMPOUNDMENT SECTIONS

CENTRALIZED FRESHWATER IMPOUNDMENT CROSS-SECTION "B-B"

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



LEGEND

- X-SECTION GRID INDEX
- X-SECTION GRID INTERMEDIATE
- X-SECTION PROPOSED GRADE
- X-SECTION EXISTING GRADE
- X-SECTION WATER SURFACE
- MATCHLINE

NOTE:

1. ALL FILL AREAS, INCLUDING ACCESS ROADS AND EXCESS MATERIAL STOCKPILES, SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.
2. ALL CUT & FILL SLOPES SHALL BE 2:1 UNLESS STATED OTHERWISE.

NAVITUS
ENERGY ENGINEERING
Telephone: (888) 862-4185 | www.NavitusEng.com

REVISION

DATE



THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

CENTRALIZED FRESHWATER IMPOUNDMENT SECTIONS
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
SCALE: AS SHOWN
SHEET 14 OF 25

STAGING AREA SECTIONS

LEGEND

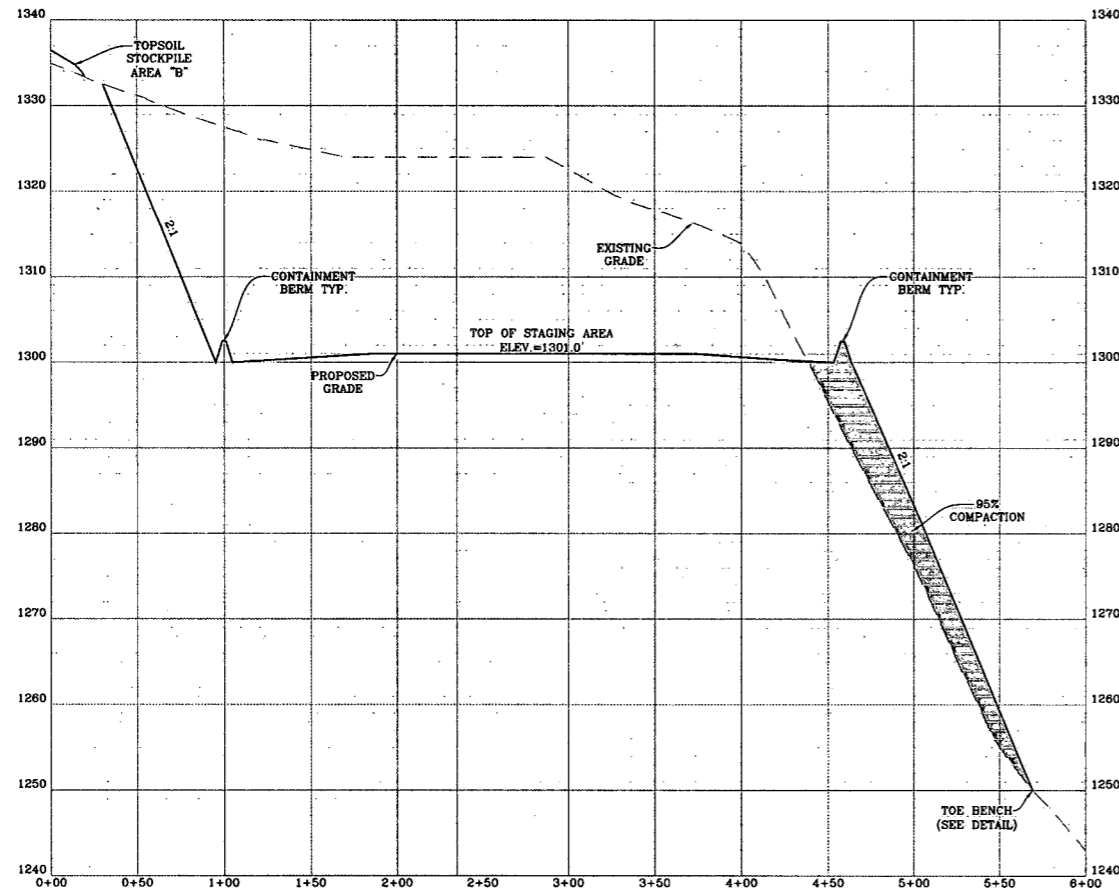
X-SECTION GRID INDEX	---
X-SECTION GRID INTERMEDIATE	---
X-SECTION PROPOSED GRADE	---
X-SECTION EXISTING GRADE	---
X-SECTION WATER SURFACE	---
MATCHLINE	---

NOTE:

- ALL FILL AREAS, INCLUDING ACCESS ROADS AND EXCESS MATERIAL STOCKPILES, SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.
- ALL CUT & FILL SLOPES SHALL BE 2:1 UNLESS STATED OTHERWISE.

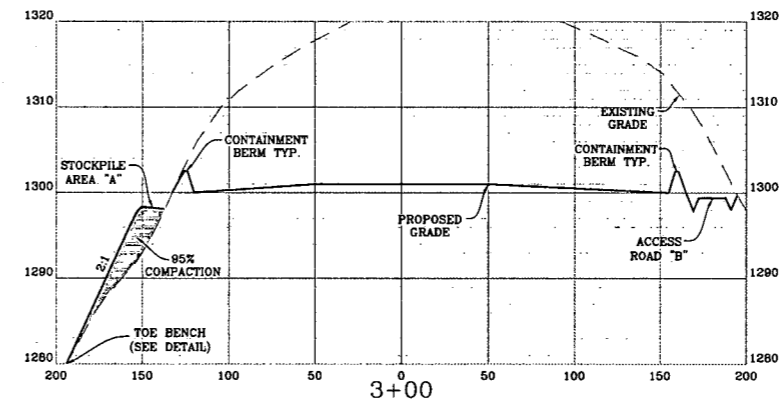
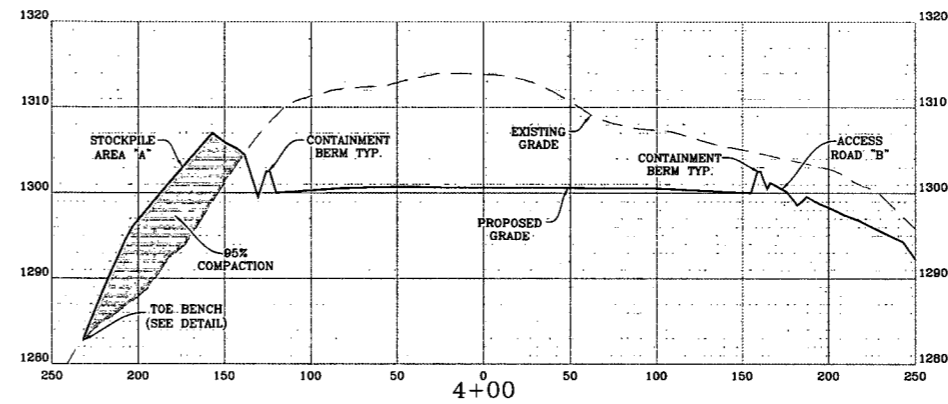
STAGING AREA CROSS-SECTION "A-A"

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



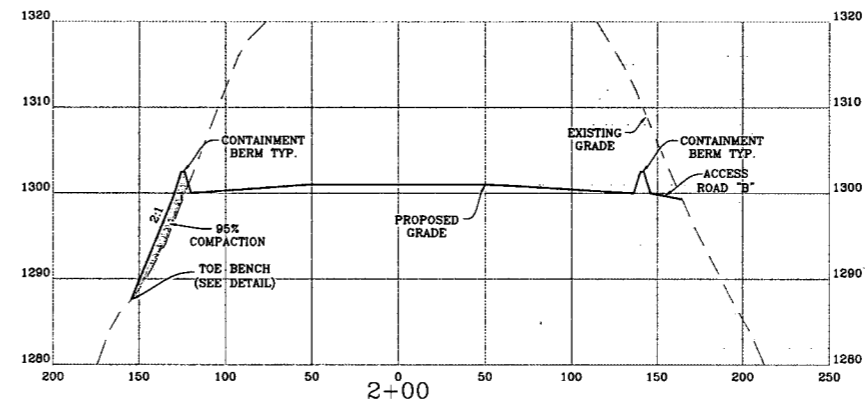
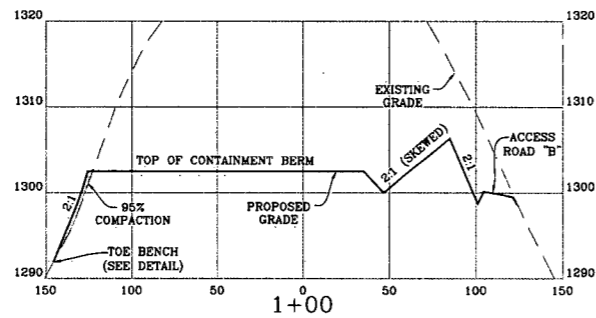
STAGING AREA CROSS-SECTIONS ALONG BASELINE "A-A"

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



STAGING AREA CROSS-SECTIONS ALONG BASELINE "A-A"

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



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

REVISION	DATE

Antero
Resources
THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

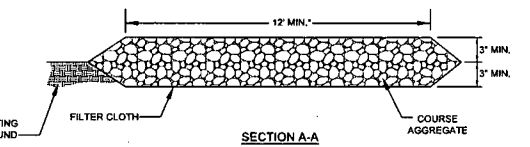
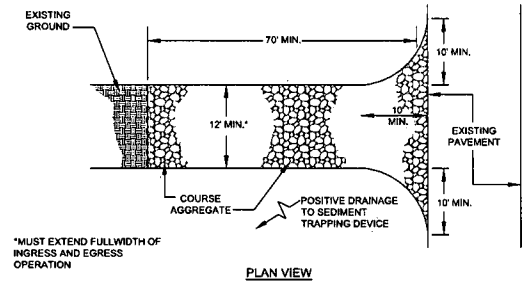
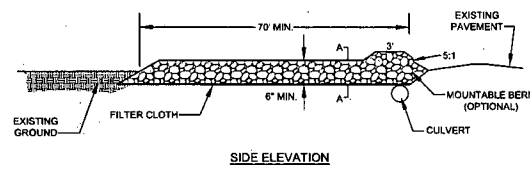
STAGING AREA SECTIONS
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



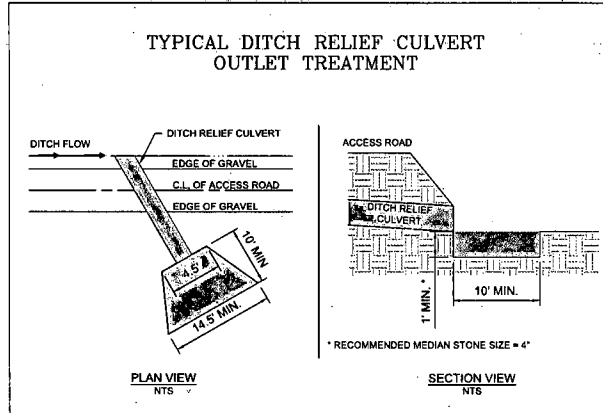
DATE: 02/27/2014
SCALE: AS SHOWN
SHEET 15 OF 25

FIGURE 3.02.1

STONE CONSTRUCTION ENTRANCE



SOURCE: ADAPTED from the 1983 Maryland Standards for Soil Erosion and Sediment Control and Va. DSWC



NOTE:
ALL DITCH LINE PROTECTION SHALL BE INSTALLED AS RECOMMENDED IN THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL. DITCH LINE PROTECTION SHALL BE BASED ON THE FOLLOWING GRADES:
1. LESS THAN 3% - GRASSED
2. 3-8% - GRASS WITH ROLLED EROSION CONTROL PRODUCTS (RECP)
3. GREATER THAN 8% - RIPRAP OR EQUIVALENT GEOTEXTILE
IF HIGH EROSION SOILS ARE ENCOUNTERED DURING CONSTRUCTION, THE ENGINEER SHOULD BE CONTACTED FOR FURTHER EVALUATION.

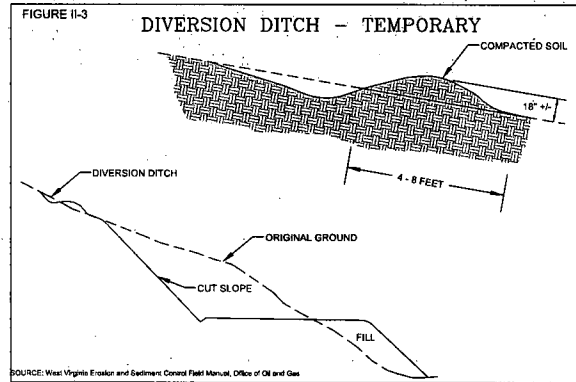
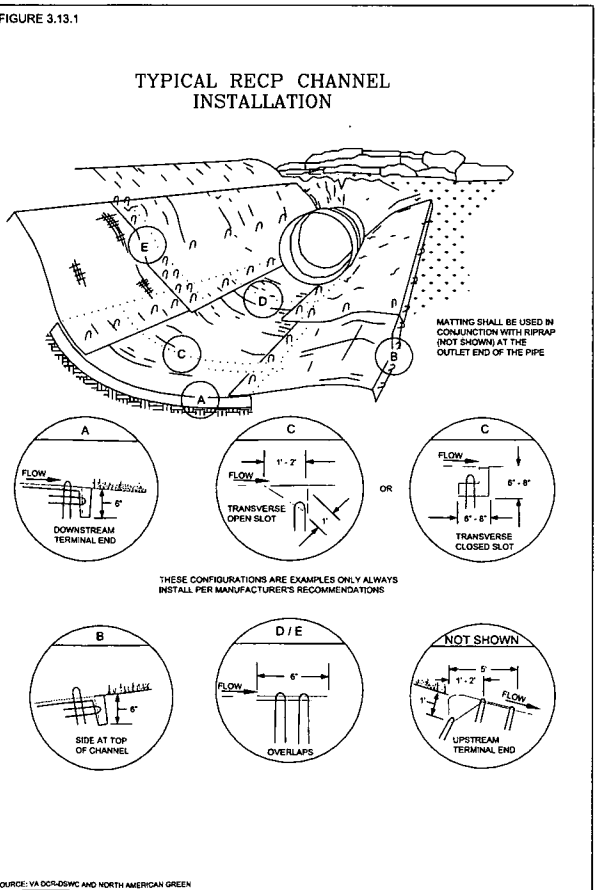
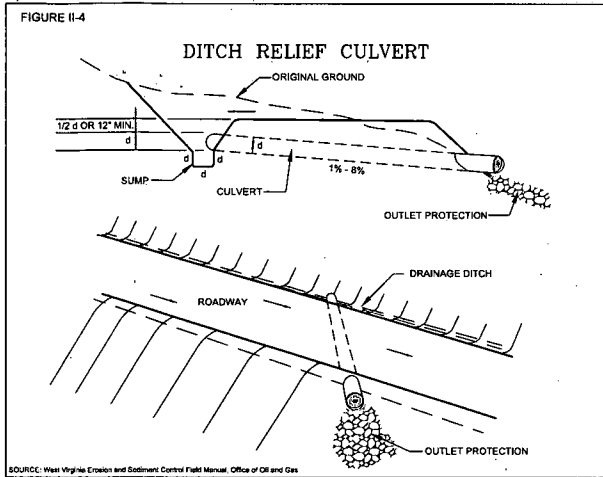
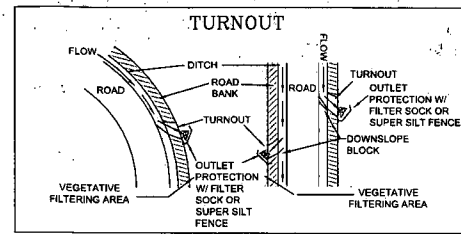
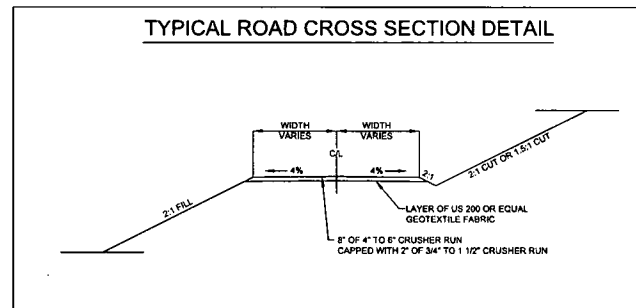
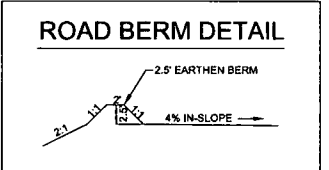
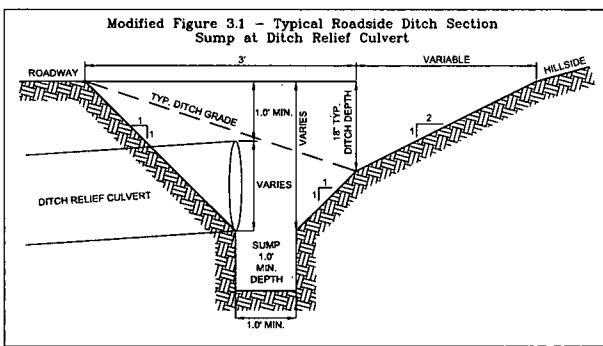
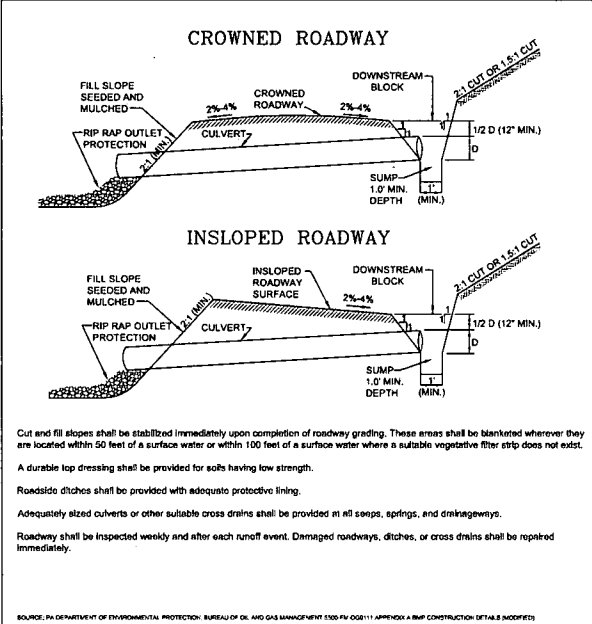
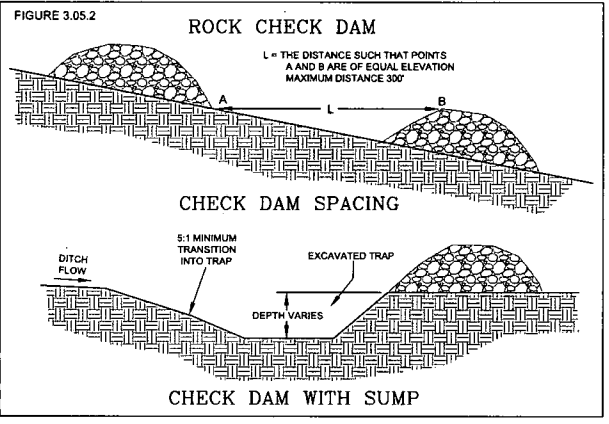
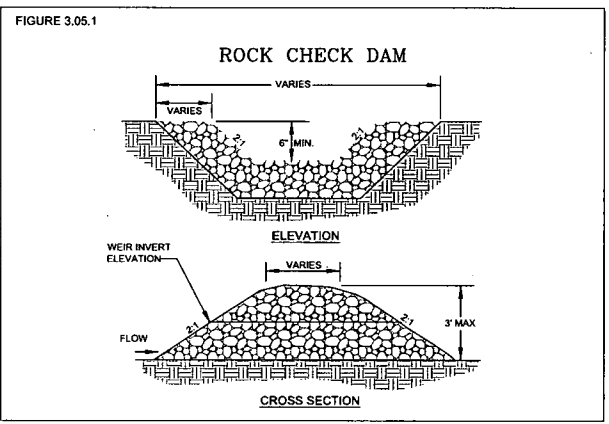


Table II-6 Spacing of Culverts

Road Grade %	Distance (Ft)
2-5	500-300
6-10	300-200
11-15	200-100
16-20	100

Table II-5 Pipe Sizes for Culverts Across Roads

Drainage Area (Ac)	Pipe Diameter (in)	Pipe Capacity (Cfs)
10	15	5
20	18	9
30	21	12
50	24	18
80	27	24
100	30	29
300	36	60
500	42	85



Cut and fill slopes shall be stabilized immediately upon completion of roadway grading. These areas shall be blanketed wherever they are located within 50 feet of a surface water or within 100 feet of a surface water where a suitable vegetative filter strip does not exist. A durable top dressing shall be provided for soils having low strength. Roadside ditches shall be provided with adequate protective lining. Adequately sized culverts or other suitable cross drains shall be provided at all seeps, springs, and drainage ways. Roadways shall be inspected weekly and after each runoff event. Damaged roadways, ditches, or cross drains shall be repaired immediately.

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

REVISION	DATE

Antero Resources
THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

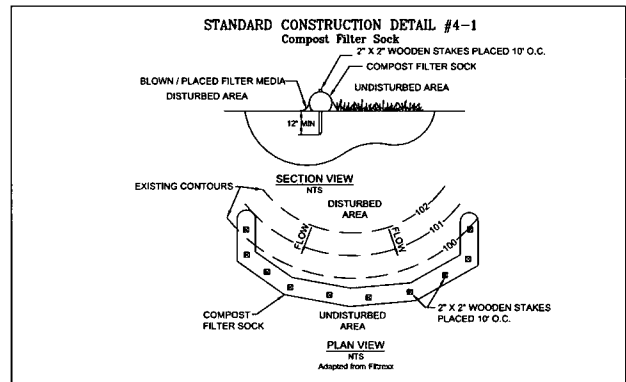
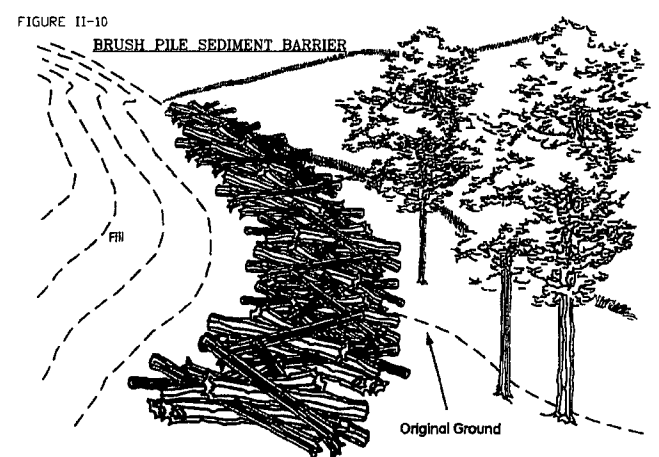
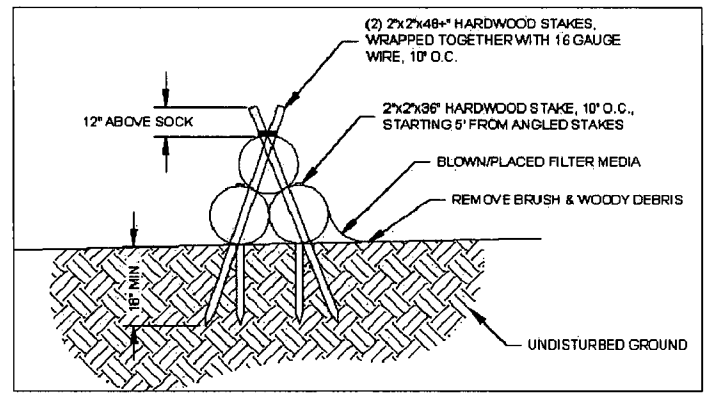
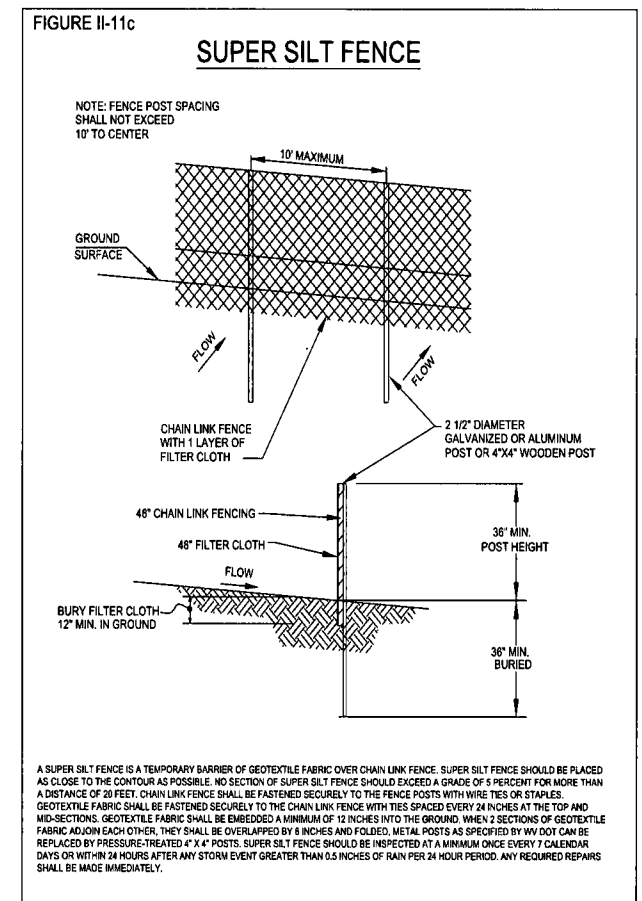
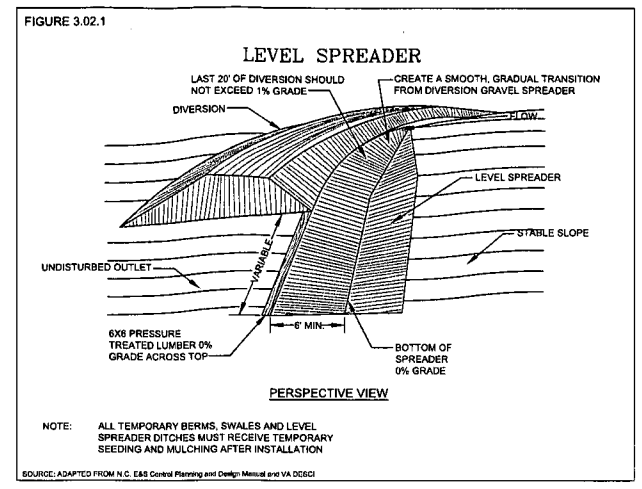
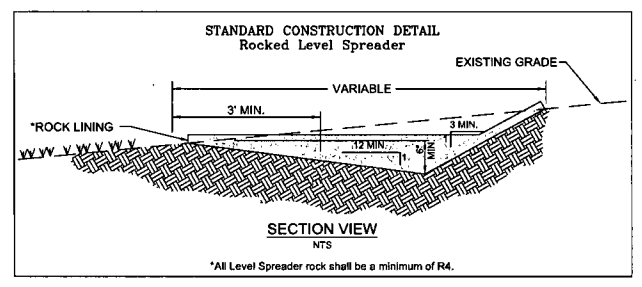
CONSTRUCTION DETAILS
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA

REGISTERED PROFESSIONAL ENGINEER
WEST VIRGINIA
STATE OF WEST VIRGINIA
02/27/2014

DATE: 02/27/2014
SCALE: N/A
SHEET 16 OF 25

Table 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	6 mil HDPE	Multi-Filament Polypropylene (MPP)	Heavy Duty Multi-Filament Polypropylene (HDMP)
Material Characteristic	Photo-degradable	Photo-degradable	Photo-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 15"	12" 18" 24"	12" 18" 24" 30"	12" 18" 24" 30"	12" 18" 24" 30"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength	26 psi	26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	25% at 1000 hr.	25% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	6 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting	HDPE biaxial net continuously wound				
	Fusion-welded junctures				
	3/4" x 3/4" Max. aperture size				
Outer Filtration Mesh	Composite Polypropylene Fabric (Woven layer & non-woven fleece mechanically fused via needle punch)				
	3/16" Max. aperture size				
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.					



Sock fabric shall meet standards of Table 4.1. Compost shall meet the following standards:

Organic Matter Content	80% -100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5-9.0
Moisture Content	35%-55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	0.0 dS Maximum

Compost Filter Sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 6 feet up the slope at 45 degrees to the main sock alignment. Maximum slope length above any sock shall not exceed manufacturer's maximum permissible slope length.

Traffic shall not be permitted to cross filter socks.

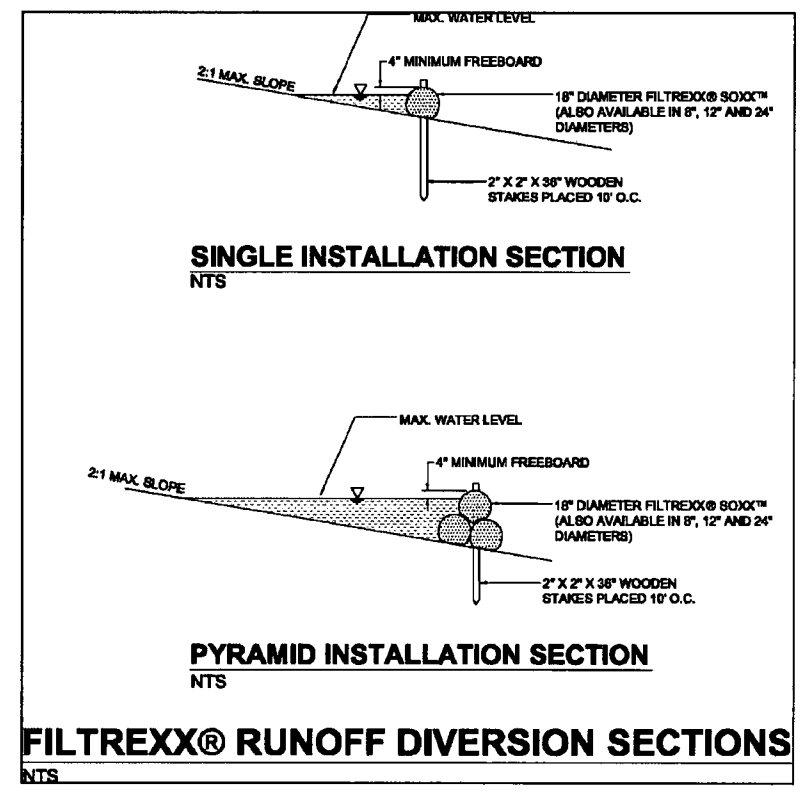
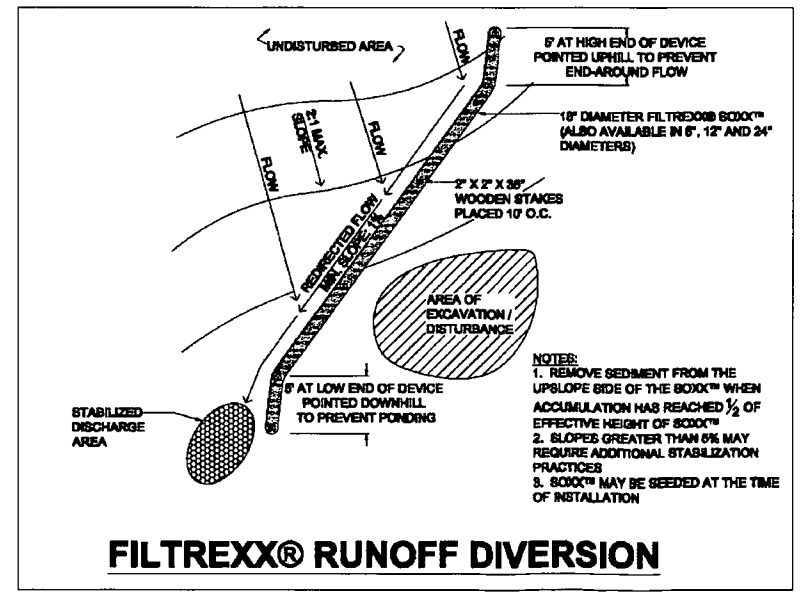
Accumulated Sediment shall be removed when it reaches 1/2 the above ground height of the sock and disposed in the manner described elsewhere in the plan.

Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

Biodegradable filter socks shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.

Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed. In the latter case, the mesh shall be cut open and the mulch spread as a soil supplement.

In the event the ground is frozen, #5 rebar with safety caps shall be used instead of wooden stakes to anchor the filter sock. Once the ground thaws the rebar anchors shall be removed and replaced with 2" x 2" wooden stakes and installed as shown in the detail above.



NAVATUS
ENERGY ENGINEERING
Telephone: (888) 662-4185 | www.NavatusEng.com

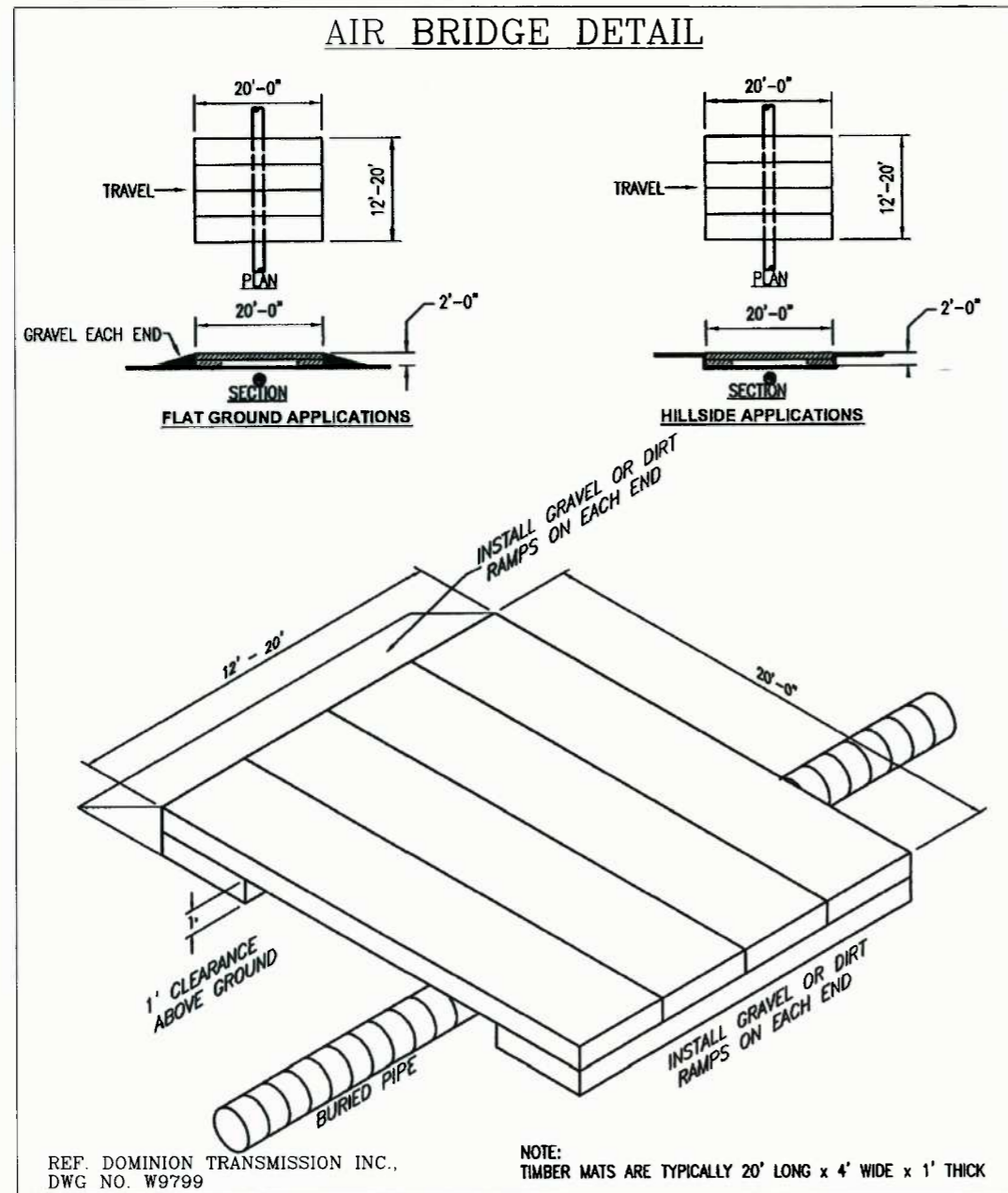
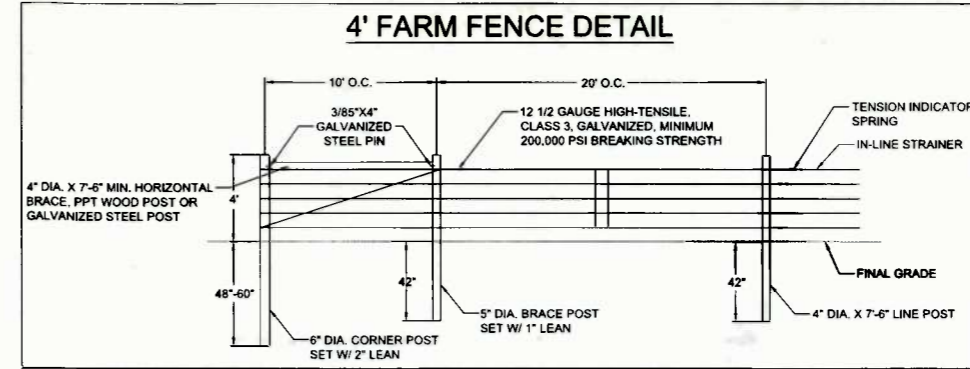
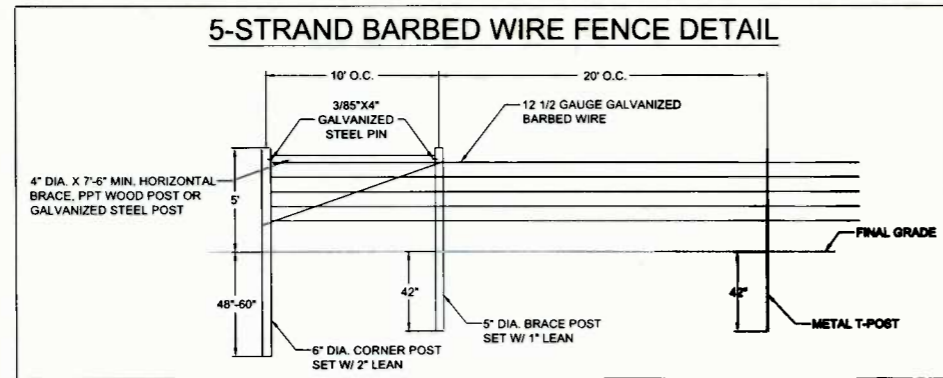
REVISION	DATE

Antero
Resources
THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

CONSTRUCTION DETAILS
LEMLEY
CENTRALIZED FRESHWATER IMPROVEMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
SCALE: N/A
SHEET 17 OF 25



	Yellow Ribbon: Yellow Ribbon used to indicate top of Cuts (C) Cut to be determined at time of stakeout Slope determined by site design
	Yellow & Orange Ribbon: Yellow and Orange Ribbon used to indicate Grade at Top of Pad/Pond/Pit
	Orange Ribbon: Orange Ribbon used to indicate toes of Fills (F) Fill to be determined at time of stakeout Slope determined by site design
	Pink Ribbon: Pink Ribbon used to indicate Top Hole Location Pink Ribbon used to indicate Survey Control Location
	Pink & Black Stripe Ribbon: Pink & Black Stripe Ribbon used to indicate Vertical Cut (VC) at Pad/Pond/Pit corner or edge Pink & Black Stripe Ribbon used to indicate Vertical Fill (VF) at Pad/Pond/Pit corner or edge Vertical Cut/Vertical Fill to be determined at time of stakeout
	Blue & White Stripe Ribbon: Blue & White Stripe Ribbon used to indicate clearing limits/construction limits
	Orange & Black Stripe Ribbon: Orange & Black Stripe Ribbon used to indicate Vertical Cut (VC) at Centerline or edge of access road Orange & Black Stripe Ribbon used to indicate Vertical Fill (VF) at centerline or edge of access road
	Pink & White Stripe Ribbon: Pink & White Stripe Ribbon used to indicate Erosion and Sediment Control Structures Silt Fence (SF) Reinforced Filter Fence (RFF) Super Silt Fence (SSF) Filter Sock (FS)
	Orange & White Stripe Ribbon: Orange & White Stripe Ribbon used to indicate Topsoil Stockpile Locations
	Blue Ribbon: Blue Ribbon used to indicate Centerline (C) Ditch Blue Ribbon used to indicate Bottom (BTM) Sediment Traps

ANTERO RESOURCES CORPORATION STANDARD RIBBON COLOR SCHEME
PROVIDED BY ANTERO RESOURCES CORPORATION

REVISION	DATE



THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

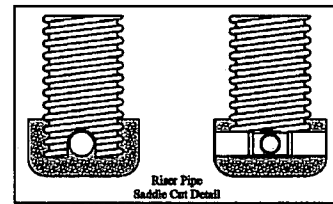
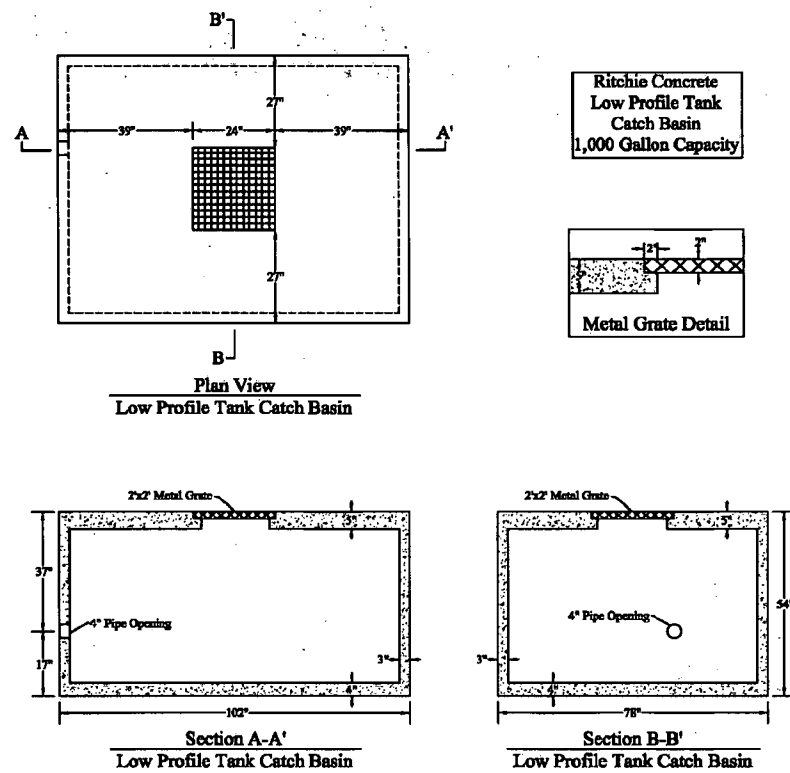
CONSTRUCTION DETAILS

LEMLEY

CENTRALIZED FRESHWATER IMPROVEMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DEWATERING SYSTEM SPECIFICATIONS



Size of Tank

6½" Wide
8½" Long
4½" Tall

Hole Size

7½" Wide
9½" Long
5'-2" Tall

Mix Design

4000 psi

	lbs. yd.	Ab. vol.
	563	2.86
	270	4.33
	1222	7.42
	1770	11.04
		27.00cf

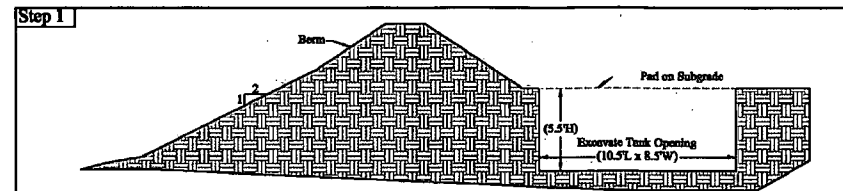
Outlet Lines

Outlet 17" from bottom of tank
Polylock Seals adaptable for 2, 3, & 4"

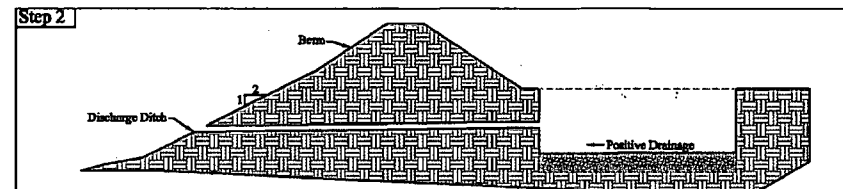
Thickness

Walls 3"
6x6x10 gauge wire mesh
¾" Rebar on 18" Centers
Bottom 4"
Tops with ½" Rebar on 14" Centers

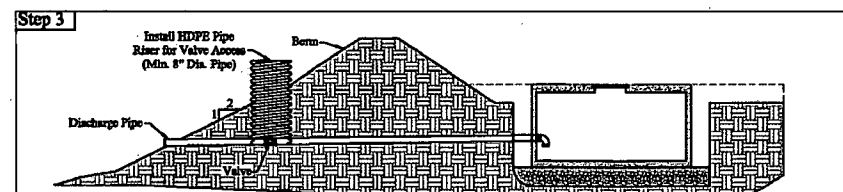
All tanks are of durable construction and are state approved



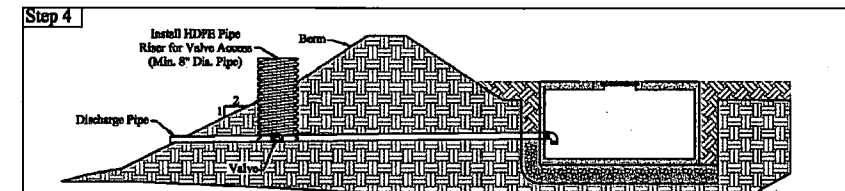
- 1.) Construct Pad to subgrade.
- 2.) Excavate sump hole 1' larger than the length, width, and height of tank.



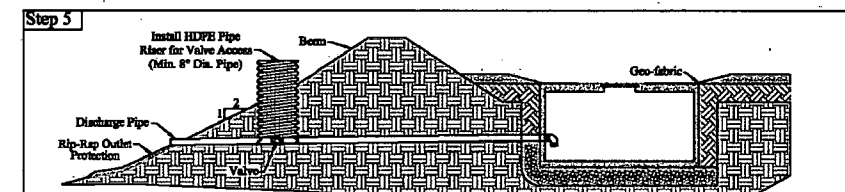
- 3.) Use crusher run stone to prepare the bottom of the excavation. Make sure to level the tank from side to side and have positive flow toward the outlet (approximately 1-2%).
- 4.) Make certain the outlet on the tank lines up with the discharge ditch for installing the discharge pipe and valve



- 5.) Set the tank in the excavation and level.
- 6.) Install pipe section, (approximately 1-2' piece) into the outlet fitting on the tank. Use hydraulic cement around the connection to insure positive seal.
- 7.) Install 4" valve onto short section of the pipe with glue (make certain to clean and prime both valve and pipe before gluing connection).
- 8.) Install sections of pipe onto the outlet side of the valve until the pipe extends through the berm and slope approximately 1'. Leave the end of the pipe exposed (make certain to clean and prime the pipe and joints before gluing the connections).
- 9.) Make certain that the pipe is supported and maintains positive flow away from the valve. Use excavated soil from the discharge ditch to support the pipe.
- 10.) Install the riser for the valve. Use a section of HDPE pipe with a larger diameter than the valve (minimum 8" diameter HDPE pipe). Cut a "saddle" on the bottom of the riser pipe so that the riser pipe will rest on the discharge pipe, surrounding the valve and keeping dirt away from the operation of the valve.
- 11.) Fill around the valve with crusher run stone and 1' on the riser pipe to keep soil out.



- 12.) Stabilize the riser pipe so that it remains perpendicular to the valve (Riser pipe needs to be perpendicular to allow smooth operation of handle and valve). Make sure to remove the factory handle on the valve and to fit "T" handle (alternate handle) onto the exposed lug on the top of the excavated.
- 13.) Begin backfilling the tank excavation and discharge ditch, use the soil excavated from the tank hole to backfill the tank and discharge ditch. Do NOT backfill with any large rocks against the tank and be certain NOT to over-compact around the tank. Improper backfilling and over-compaction around the tank will lead to the tank collapsing. It is recommended that finer soils are used to backfill around the tank and discharge pipe to reduce voids and excessive settling.
- 14.) Once backfilling is complete, the top of the tank should be flush with the sub-grade.
- 15.) Cut the riser pipe off 2' above sub-grade to allow for the riser pipe to extend 1' above the final grade and keep surface water from entering the pipe.



- 16.) Repair the pad berm and fill slope.
- 17.) Install Rip-Rap spillway from the discharge pipe outlet to the bottom of the slope. Depending on site conditions, the spillway will discharge through a level spreader to vegetation or E&S controls or discharge from the spillway into an access road ditch.
- 18.) With tank installation complete, the pad can then be stoned. When using Geo-fabric (Typar), be sure to lap the fabric over the edge of the lid on the tank. This lap will help run-off to flow into the tank. Taper stone down from the pad to the tank, so there is not a "lip" or trip hazard on the edge of stone.
- 19.) Be sure NOT to run a smooth drum or sheeps-footed roller over the tank lid or vibrate too close to the sides of the tank. Compacting or operating heavy equipment near the tank may cause the walls on the tank to fail. Keep traffic off of the tank. It is recommended that barriers be installed to prevent traffic from driving over or parking on or near the tank.

OPERATIONAL NOTE:

THE DEWATERING VALVE WILL REMAIN CLOSED DURING OPERATIONS. ANY WATER CAPTURED DURING OPERATIONS WILL BE TESTED PRIOR TO BEING DISCHARGED OR PUMPED BY A COMMERCIAL VENDOR. AFTER OPERATIONS ARE COMPLETE, THE VALVE WILL BE OPENED BY A DESIGNATED RESPONSIBLE PERSON ONLY.

NOTE:

1. THE DEWATERING SYSTEM DETAILS AND SPECIFICATIONS SHOWN ON THIS SHEET WERE PROVIDED BY ANTERO RESOURCES CORPORATION AND REFLECT THEIR CURRENT STANDARD TO CONTROL POTENTIAL SPILLS DURING OPERATIONS.

NAVITUS
ENERGY ENGINEERING

Telephone: (888) 862-4185 | www.NavitusEng.com

REVISION

DATE



THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

CONSTRUCTION DETAILS
LEMLEY
CENTRALIZED FRESHWATER INFUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA

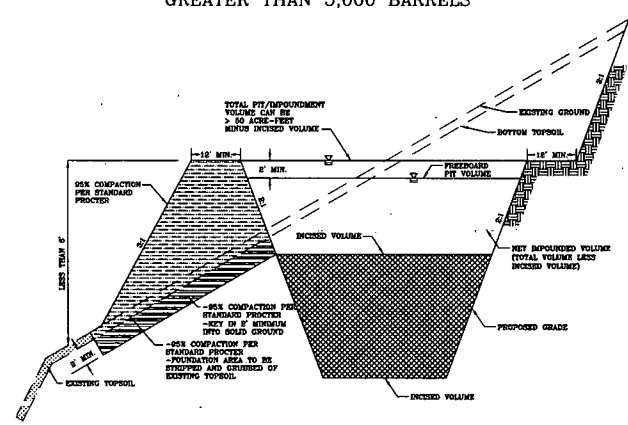


DATE: 02/27/2014

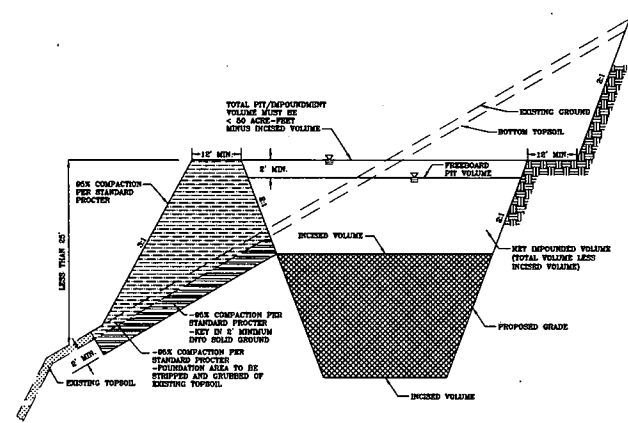
SCALE: N/A

SHEET 19 OF 25

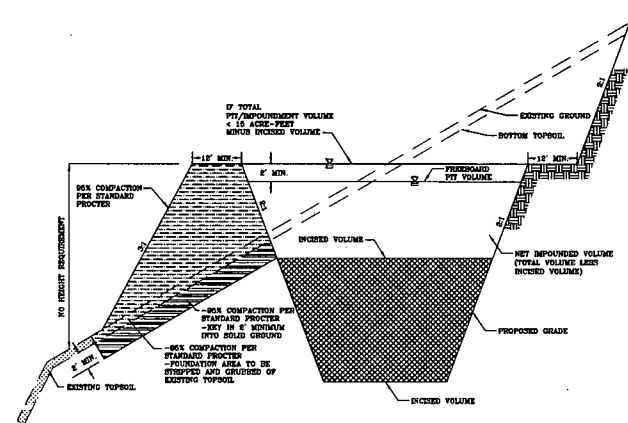
WEST VIRGINIA CODE 35 CSR 4
 DESIGN AND CONSTRUCTION REQUIREMENTS
 FOR ASSOCIATED PITS, ASSOCIATED IMPOUNDMENTS, &
 CENTRALIZED IMPOUNDMENTS
 GREATER THAN 5,000 BARRELS



SECTION VIEW



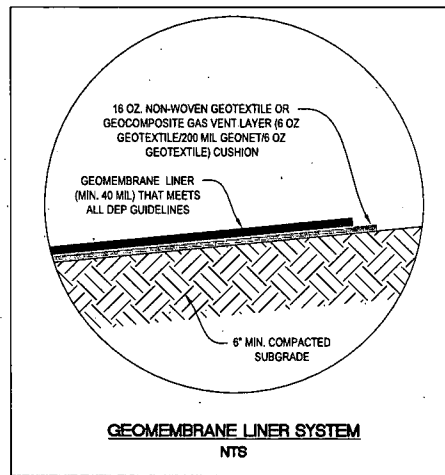
SECTION VIEW



SECTION VIEW

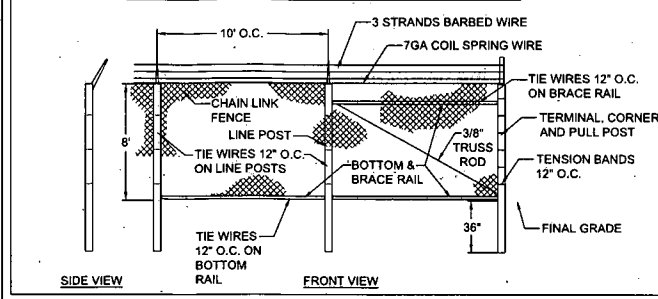
- NOTES:
 1. ALL FILL SHOULD BE KEYED IN TO ORIGINAL GROUND EVERY 2-5 VERTICAL FEET DEPENDING ON EXISTING GROUND SLOPE
 2. MINIMUM OUTSIDE AND INSIDE EMBANKMENT (FILL) SLOPES SHALL BE 2H:1V. THE INSIDE AND OUTSIDE SLOPES MUST ADD UP TO 5H:1V.

NTS

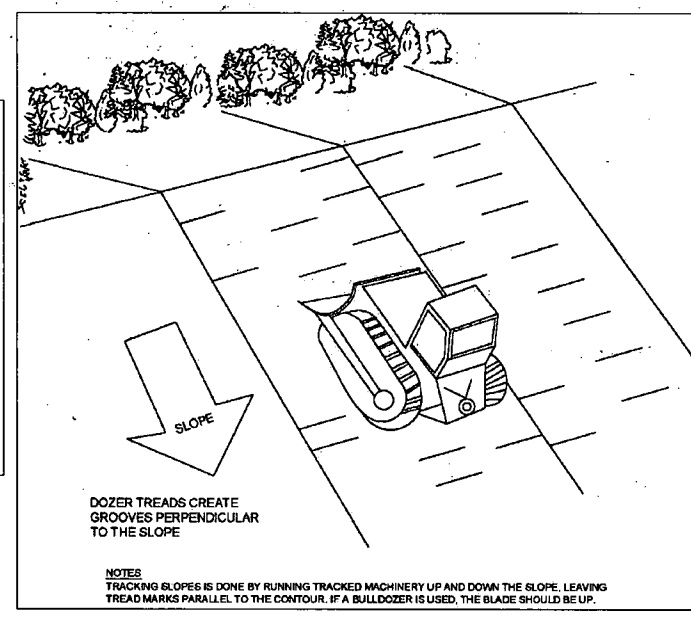


GEOMEMBRANE LINER SYSTEM
NTS

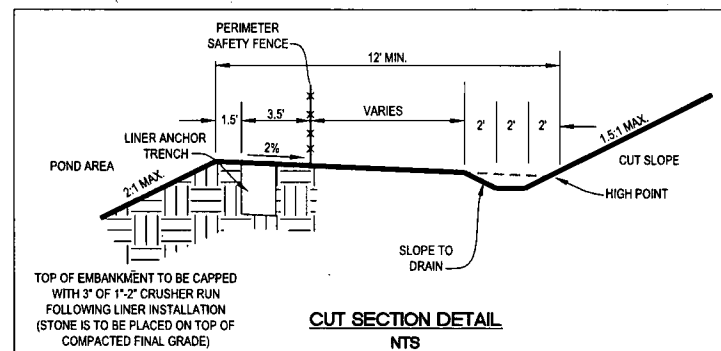
8' CHAIN LINK W/ 3 STRAND BARBED WIRE
 PERIMETER SAFETY FENCE



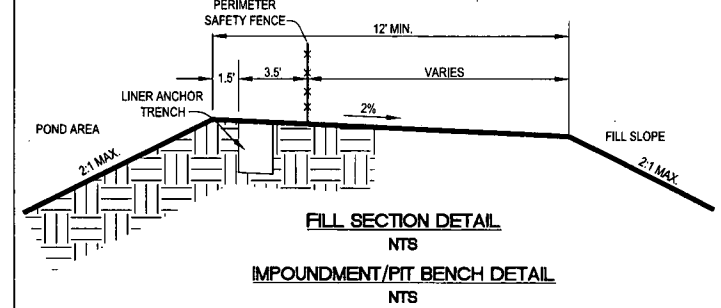
SIDE VIEW FRONT VIEW



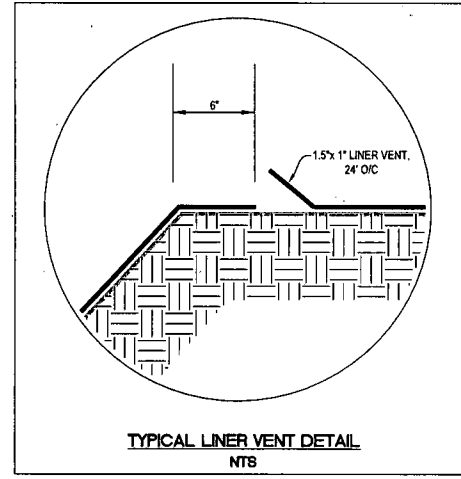
NOTES:
 TRACKING SLOPES IS DONE BY RUNNING TRACKED MACHINERY UP AND DOWN THE SLOPE, LEAVING TREAD MARKS PARALLEL TO THE CONTOUR. IF A BULLDOZER IS USED, THE BLADE SHOULD BE UP.



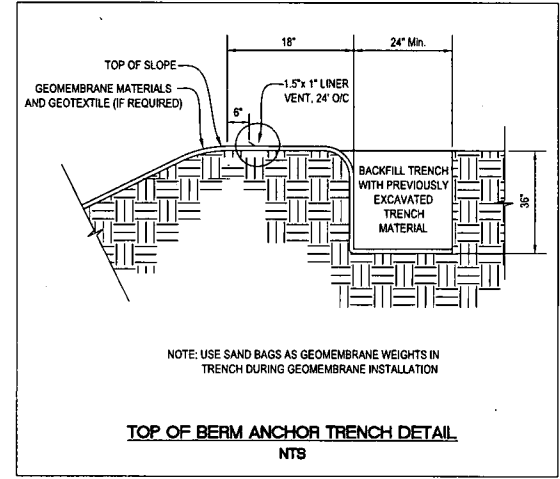
CUT SECTION DETAIL
NTS



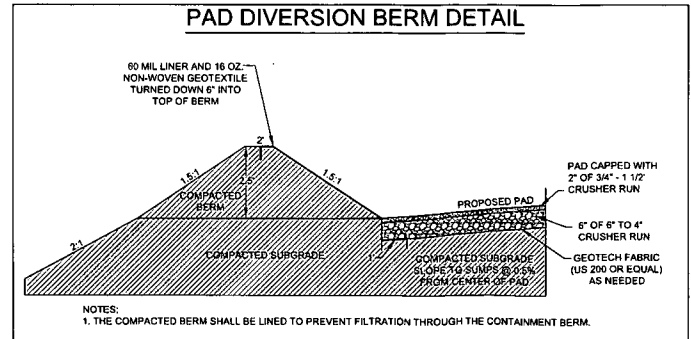
FILL SECTION DETAIL
NTS
 IMPOUNDMENT/PIT BENCH DETAIL
NTS



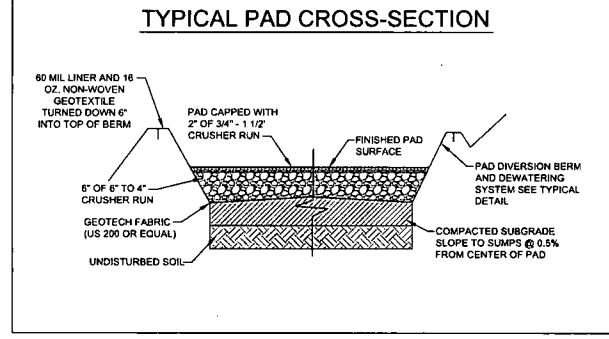
TYPICAL LINER VENT DETAIL
NTS



TOP OF BERM ANCHOR TRENCH DETAIL
NTS



PAD DIVERSION BERM DETAIL



TYPICAL PAD CROSS-SECTION

NAVATUS
 ENERGY ENGINEERING
 Telephone: (888) 662-4185 | www.NavatusEng.com

REVISION	DATE

Antero Resources
 THIS DOCUMENT WAS PREPARED FOR:
 ANTERO RESOURCES CORPORATION

CONSTRUCTION DETAILS
LEMLEY
 CENTRALIZED FRESHWATER IMPOUNDMENT
 GRANT DISTRICT WEST VIRGINIA
 DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
 SCALE: N/A
 SHEET 20 OF 25

REVEGETATION
Taken from the
West Virginia Erosion and Sediment Control Field Manual
West Virginia Division of Environmental Protection Office of Oil and Gas
Charleston, W.Va.
Section IV

Temporary Seeding

a. General Conditions Where Practice Applies
Where exposed soil surfaces are not to be fine-graded or worked for periods longer than 21 days. Temporary vegetative cover with sediment controls must be established where runoff will go directly into a stream. Immediately upon construction of the site (site includes road and location), vegetation must be established on road bank and location slopes. A permanent vegetative cover shall be applied to areas that will be left un-worked for a period of more than six months.

b. Seed Mixtures and Planting Dates
Refer to Tables 2 through 4 for recommended dates to establish vegetative cover and the approved lists of temporary and permanent plant species, and planting rates. Table 3 gives recommended types of temporary vegetation, rates of application, and optimum seeding dates. In situations where another cover is desired, contact the local soil conservation district for seeding recommendations.

c. Seed Application
Apply seed by broadcasting, drilling, or by hydroseed according to the rates indicated in Table IV-3. Perform all planting operations at right angles to the slope. Necessary site preparation and roughening of the soil surface should be done just prior to seeding. Seedbed preparation may not be required on newly disturbed areas.

Permanent Seeding

a. General
Permanent vegetative cover will be established where no further soil disturbance is anticipated or needed. Soil fertility and pH level should be tested and adjusted according to seed species planted. Planting of permanent vegetative covers must be performed on all disturbed areas after completion of the drilling process. Any site that contains significant amounts of topsoil shall have the topsoil removed and stockpiled when feasible. Topsoil should not be added to slopes steeper than 2:1 unless a good bonding to the sub-layer can be achieved. After proper grading and seedbed preparation, the vegetation will reestablish ground cover for the control of surface water runoff erosion.

All required seedbed preparation and loosening of soil by disking or dozer tracking should be performed just prior to seeding. If seedbed preparation is not feasible, 50% more seed shall be added to the recommended rates shown in Tables IV-3 and IV-4. When hydroseeding, seedbed preparation may not be necessary if adequate site preparation was performed. Incorporate the appropriate amount of lime and/or fertilizer in the slurry mix when hydroseeding.

When hydroseeding, first mix the lime, fertilizer, and hydro-mulch in the recommended amount of water. Mix the seed and inoculants together within one hour prior to planting, and add to the slurry just before seeding. Apply the slurry uniformly over the prepared site. Assume that agitation is continuous throughout the seeding operation and the mix is applied within one hour of initial mixing.

b. Lime and Fertilizer
1. Lime shall be applied to all permanent seedings. The pH of the soil is to be determined and lime applied accordingly. Once the pH is known, select the amount of lime to be applied from Table IV-5.
2. Fertilizer shall be applied in all permanent seedings. Apply the equivalent for 500 lbs. minimum 10-20-20 fertilizer per acre or use the amount of fertilizer and lime recommended by a certified soil test.
3. Application: For best results and maximum benefits, the lime and fertilizer are to be applied at the time of seedbed preparation.

c. Permanent Seed Mixtures
Planners should take into consideration the species makeup of the existing pasture and the landowner's future pasture management plans when recommending seed mixtures. Selection: From Tables IV 4a and b, Permanent Seeding Mixtures Suitable for Establishment in West Virginia.

Notes:
1. All legumes must be planted with the proper inoculants prior to seeding.
2. 'Lathco' Flatpea is potentially poisonous to some livestock.
3. Only endophyte free varieties of Tall Fescue should be used. Tall Fescue and Crownvetch are also very invasive species, non-native to WV.
4. For unprepared seedbeds or seeding outside the optimum timeframes, add 50% more seed to the specified rate. Mixtures in Table 4b are more wildlife and farm friendly; those listed in bold are suitable for use in shaded woodland settings. Mixtures in italic are suitable for use in filter strips.

d. Seeding for Wildlife Habitat
Consider the use of the native plants or locally adapted plants when selecting cover types and species for wildlife habitat. Wildlife friendly species or mixes that have multiple values should be considered. See wildlife friendly species/mixtures in Table IV-4b. Consider selecting no or low maintenance long-lived plants adaptable to sites which may be difficult to maintain with equipment.

NOTE:

1. NO FESCUE OR TIMOTHY GRASS SHALL BE USED.

Mulching

a. General Organic Mulches
The application of straw, hay or other suitable materials to the soil surface to prevent erosion. Straw made from wheat or oats is the preferred mulch, the use of hay is permissible, but not encouraged due to the risk of spreading invasive species. Mulch must be applied to all temporary and permanent seeding on all disturbed areas. Depending on site conditions, in critical areas such as waterways or steep slopes, additional or substitute soil protective measures may be used if deemed necessary. Examples include jute mesh and soil stabilization blankets or erosion control matting.

Areas that have been temporarily or permanently seeded should be mulched immediately following seeding. Mulches conserve desirable soil properties, reduce soil moisture loss, prevent crusting and sealing of the soil surface and provide a suitable microclimate for seed germination.
Areas that cannot be seeded because of the season should be mulched to provide some protection to the soil surface. An organic mulch, straw or hay should be used and the area then seeded as soon as weather or seasonal conditions permit. Do not use fiber mulch (cellulose-hydroseed) alone for this practice; at normal application rates it will not give the soil protection of other types of mulch.
Wood cellulose fiber mulch is used in hydroseeding operations and applied as part of the slurry. It creates the best seed-soil contact when applied over the top of (as a separate operation) newly seeded areas. Fiber mulch does not alone provide sufficient protection on highly erodible soils, or during less than favorable growing conditions. Fiber mulch should not be used alone during the dry summer months or when used for late fall mulch cover. Use straw mulch during these periods and fiber mulch may be used to tack (anchor) the straw mulch. Fiber mulch is well suited for steep slopes, critical areas and areas susceptible to wind.

b. Chemical Mulches, Soil Binders and Tackifiers
A wide range of synthetic spray on materials are marketed to stabilize and protect the soil surface. These are mixed with water and sprayed over the mulch and to the soil. They may be used alone in some cases as temporary stabilizers, or in conjunction with fiber mulch, straw or hay.
When used alone most chemical mulches do not have the capability to insulate the soil or retain soil moisture that organic mulches have.

c. Specifications
From Table IV-6 select the type of mulch and rate of application that will best suit the conditions at the site.

d. Anchoring
Depending on the field situation, mulch may not stay in place because of wind action or rapid water runoff. In such cases, mulch is to be anchored mechanically or with mulch netting.

1. Mechanical Anchoring
Apply mulch and pull mulch anchoring tool over the mulch. When a disk is used set the disk straight and pull across slope. Mulch material should be tugged into the soil about three inches.
2. Mulch netting
Follow manufacturer's recommendation when positioning and stapling the mulch netting in the soil.

Table IV-1
Recommended Seeding Dates

Planting Dates	Suitability
March 1 - April 15 and August 1 - October 1	Best Seeding Periods
April 15 - August 1	HIGH RISK - moisture stress likely
October 1 - December 1	HIGH RISK - freeze damage to young seedlings
December 1 - March 1	Good seeding period. Dormant seeding

Table 2
Acceptable Fertilization Recommendation

Species	N (lbs/ac)	P2O5 (lbs/ac)	Example Rec. (per acre)
Cool Season Grass	40	80	400 lbs. 10-20-20
CS Grass & Legume	30	60	300 lbs. 10-20-20
Temporary Cover	40	40	200 lbs. 19-19-19

Table 3
Temporary Cover

Species	Seeding Rate (lbs/acre)	Optimum Seeding Dates	Drainage	pH Range
Annual Ryegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Poorly	5.5 - 7.5
Field Bromegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Mod. Well	6.0 - 7.0
Spring Oats	96	3/1 - 6/15	Well - Poorly	5.5 - 7.0
Sundangrass	40	5/15 - 8/15	Well - Poorly	5.5 - 7.5
Winter Rye	168	8/15 - 10/15	Well - Poorly	5.5 - 7.5
Winter Wheat	180	8/15 - 11/15	Well - Mod. Well	5.5 - 7.0
Japanese Millet	30	6/15 - 8/15	Well	4.5 - 7.0
Redtop	5	3/1 - 6/15	Well	4.0 - 7.5
Annual Ryegrass	26	3/1 - 6/15	Well - Poorly	5.5 - 7.5
Spring Oats	64	3/1 - 6/15	Well - Poorly	5.5 - 7.5

NOTE: These rates should be increased by 50% if planted April 15 - August 1 and October 1 - March 1.

Table 4a
Permanent Seeding Mixture

Species/Mixture	Seeding Rate (lbs/acre)	Soil Drainage preference	pH Range
Crownvetch / Tall Fescue	10 - 15	Well - Mod. Well	5.0 - 7.5
Crownvetch / Perennial Ryegrass	20	Well - Mod. Well	5.0 - 7.5
Flatpea or Perennial Pea / Tall Fescue	15	Well - Mod. Well	4.0 - 8.0
Ladino Clover / Serecia Lespedeza / Tall Fescue	30	Well - Mod. Well	4.5 - 7.5
Tall Fescue / Ladino Clover / Redtop	40	Well - Mod. Well	5.0 - 7.5
Crownvetch / Tall Fescue / Redtop	10	Well - Mod. Well	5.0 - 7.5
Tall Fescue / Birdfoot Trefoil / Redtop	40	Well - Mod. Well	5.0 - 7.5
Serecia Lespedeza / Tall Fescue / Redtop	25	Well - Mod. Well	4.5 - 7.5
Redtop / Tall Fescue / Creeping Red / Tall Fescue	30	Well - Mod. Well	4.5 - 7.5
Perennial Ryegrass / Tall Fescue / Lathco Flatpea *	10	Well - Poorly	4.5 - 7.5
	15	Well - Poorly	5.8 - 8.0
	20		

* 'Lathco' Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding. For unprepared seedbeds or seeding outside the optimum timeframe, add 50% more seed to the specified rate.

Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

Table 4b
Wildlife and Farm Friendly Seed Mixtures

Species/Mixture	Seeding Rate (lbs/acre)	Soil Drainage preference	pH Range
KY Bluegrass / Redtop	20	Well - Mod. Well	5.5 - 7.5
Ladino Clover or Birdfoot Trefoil	2 / 10		
Timothy / Alfalfa	5	Well - Mod. Well	6.5 - 8.0
Timothy / Birdfoot Trefoil	12	Well - Poorly	5.5 - 7.5
Orchardgrass / Ladino Clover / Redtop	10	Well - Mod. Well	5.5 - 7.5
Orchardgrass / Ladino Clover / Orchardgrass	2	Well - Mod. Well	5.5 - 7.5
Perennial Ryegrass / Creeping Red Fescue / Perennial Ryegrass	20	Well - Mod. Well	5.5 - 7.5
Orchardgrass or KY Bluegrass	10	Well - Mod. Well	6.0 - 7.5
Birdfoot Trefoil / Redtop / Orchardgrass	10	Well - Mod. Well	5.5 - 7.5
Lathco Flatpea * / Perennial Ryegrass	30	Well - Mod. Well	5.5 - 7.5
Lathco Flatpea * / Orchardgrass	20	Well - Mod. Well	5.5 - 7.5

* 'Lathco' Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding. For unprepared seedbeds or seeding outside the optimum timeframe, add 50% more seed to the specified rate.

Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

Table IV-5
Lime and Fertilizer Application Table

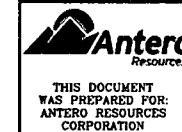
pH of Soil	Lime in Tons per Acre	Fertilizer, Lbs. per Acre (10-20-20 or Equivalent)
Above 6.0	2	500
5.0 to 6.0	3	500
Below 5.0	4	500

The pH can be determined with a portable pH testing kit or by sending the soil samples to a soil testing laboratory. When 4 tons of lime per acre are applied it must be incorporated into the soil by disking, backblading or tracking up and down the slope.

Table IV-6
Mulch Materials Rates and Uses

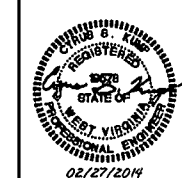
Material	Minimum Rates per acre	Coverage	Remarks
Hay or Straw	2 to 3 Tons	Cover 75% to 90%	Subject to wind blowing or washing unless tled down
Wood Fiber	100 to 150 bales	of Surface	For hydroseeding
Pulp Fiber	1000 to 1500 lbs	Cover all	
Wood - Cellulose		Disturbed Areas	
Recirculated Paper			

REVISION	DATE



THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

CONSTRUCTION DETAILS
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
SCALE: N/A
SHEET 21 OF 25

ACCESS ROAD & CENTRALIZED FRESHWATER IMPOUNDMENT RECLAMATION PLAN

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

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

REVISION	DATE

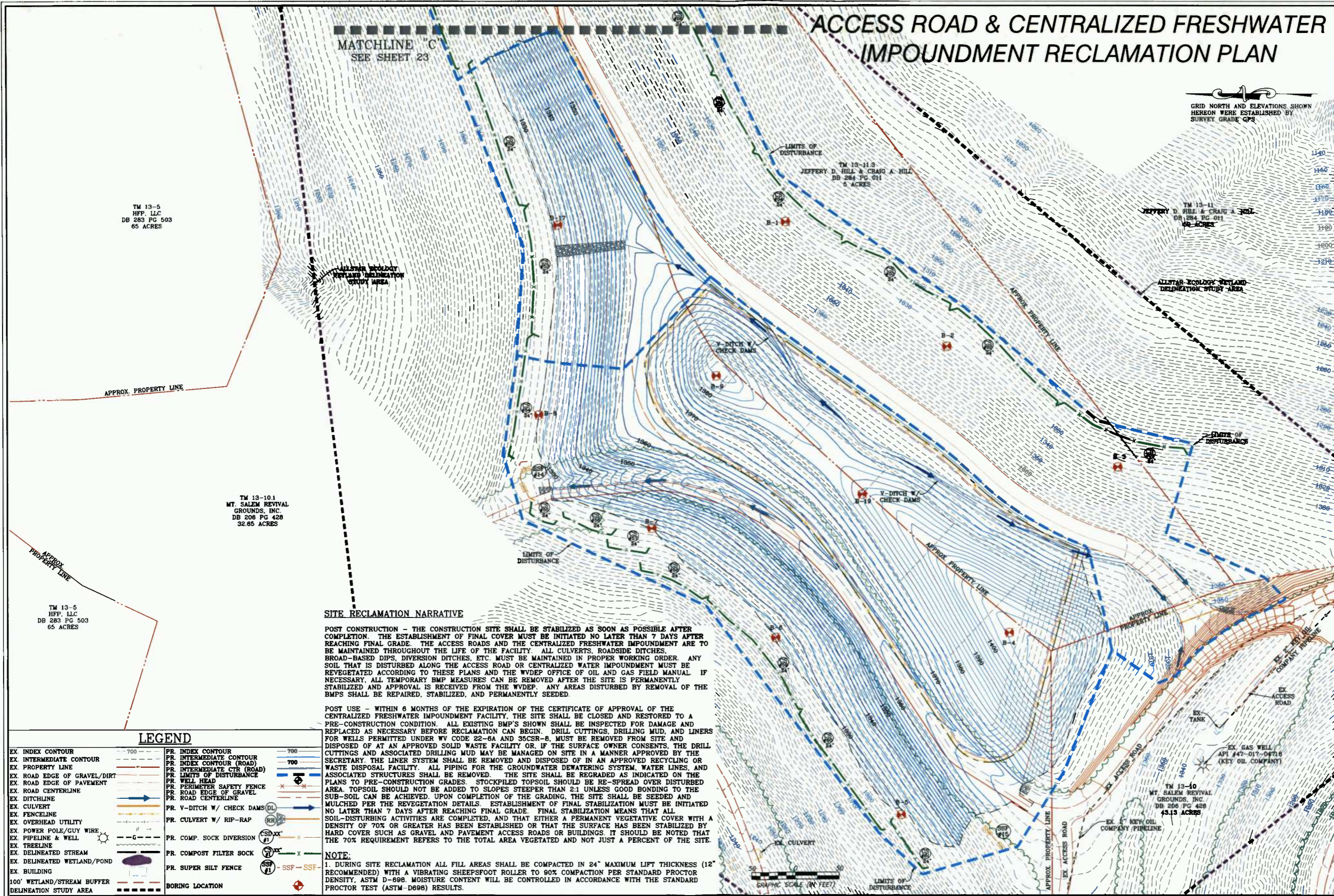


THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

ACCESS ROAD & CENTRALIZED FRESHWATER IMPOUNDMENT RECLAMATION PLAN
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
SCALE: 1" = 50'
SHEET 22 OF 25



SITE RECLAMATION NARRATIVE

POST CONSTRUCTION - THE CONSTRUCTION SITE SHALL BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. THE ESTABLISHMENT OF FINAL COVER MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. THE ACCESS ROADS AND THE CENTRALIZED FRESHWATER IMPOUNDMENT ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY. ALL CULVERTS, ROADSIDE DITCHES, BROAD-BASED DIPS, DIVERSION DITCHES, ETC. MUST BE MAINTAINED IN PROPER WORKING ORDER. ANY SOIL THAT IS DISTURBED ALONG THE ACCESS ROAD OR CENTRALIZED WATER IMPOUNDMENT MUST BE REVEGETATED ACCORDING TO THESE PLANS AND THE WVDEP OFFICE OF OIL AND GAS FIELD MANUAL. IF NECESSARY, ALL TEMPORARY BMP MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP. ANY AREAS DISTURBED BY REMOVAL OF THE BMPs SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEED.

POST USE - WITHIN 6 MONTHS OF THE EXPIRATION OF THE CERTIFICATE OF APPROVAL OF THE CENTRALIZED FRESHWATER IMPOUNDMENT FACILITY, THE SITE SHALL BE CLOSED AND RESTORED TO A PRE-CONSTRUCTION CONDITION. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE, AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. DRILL CUTTINGS, DRILLING MUD, AND LINERS FOR WELLS PERMITTED UNDER WV CODE 22-6A AND 35CSR-8, MUST BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SOLID WASTE FACILITY OR, IF THE SURFACE OWNER CONSENTS, THE DRILL CUTTINGS AND ASSOCIATED DRILLING MUD MAY BE MANAGED ON SITE IN A MANNER APPROVED BY THE SECRETARY. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES, AND ASSOCIATED STRUCTURES SHALL BE REMOVED. THE SITE SHALL BE REGRADED AS INDICATED ON THE PLANS TO PRE-CONSTRUCTION GRADES. STOCKPILED TOPSOIL SHOULD BE RE-SPREAD OVER DISTURBED AREA. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS GOOD BONDING TO THE SUB-SOIL CAN BE ACHIEVED. UPON COMPLETION OF THE GRADING, THE SITE SHALL BE SEED AND MULCHED PER THE REVEGETATION DETAILS. 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 GRAVEL AND PAVEMENT ACCESS ROADS OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.

NOTE:
1. DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY, ASTM D-698. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.

LEGEND	
EX. INDEX CONTOUR	700
EX. INTERMEDIATE CONTOUR	700
EX. PROPERTY LINE	
EX. ROAD EDGE OF GRAVEL/DIRT	
EX. ROAD EDGE OF PAVEMENT	
EX. ROAD CENTERLINE	
EX. DITCHLINE	
EX. CULVERT	
EX. FENCELINE	
EX. OVERHEAD UTILITY	
EX. POWER POLE/GUY WIRE	
EX. PIPELINE & WELL	
EX. TREELINE	
EX. DELINEATED STREAM	
EX. DELINEATED WETLAND/POND	
EX. BUILDING	
100' WETLAND/STREAM BUFFER DELINEATION STUDY AREA	
PR. INDEX CONTOUR	700
PR. INTERMEDIATE CONTOUR	700
PR. INDEX CONTOUR (ROAD)	
PR. INTERMEDIATE CTR (ROAD)	
PR. LIMITS OF DISTURBANCE	
PR. PERIMETER SAFETY FENCE	
PR. ROAD EDGE OF GRAVEL	
PR. ROAD CENTERLINE	
PR. V-DITCH W/ CHECK DAMS	
PR. CULVERT W/ RIP-RAP	
PR. COMP. SOCK DIVERSION	
PR. COMPOST FILTER SOCK	
PR. SUPER SILT FENCE	
BORING LOCATION	

TM 13-5
HFP, LLC
DB 283 PG 503
65 ACRES

TM 13-10.1
MT. SALEM REVIVAL
GROUNDS, INC.
DB 208 PG 428
32.65 ACRES

TM 13-5
HFP, LLC
DB 283 PG 503
65 ACRES

MATCHLINE "C"
SEE SHEET 23

GRAPHIC SCALE (IN FEET)

ACCESS ROAD RECLAMATION PLAN

APPROX. EX. GAS WELL
API #047-D17-01883
(CONSOL. GAS COMPANY)
ABANDONED

MATCHLINE "D"
SEE SHEET 24

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

TM 13-5
HFP, LLC
DB 285 PG 603
65 ACRES

TM 13-11
JEFFERY D. HILL & CRAIG A. HILL
DB 284 PG 011
58 ACRES

SITE RECLAMATION NARRATIVE

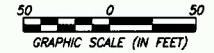
POST CONSTRUCTION - THE CONSTRUCTION SITE SHALL BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. THE ESTABLISHMENT OF FINAL COVER MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. THE ACCESS ROADS AND THE CENTRALIZED FRESHWATER IMPOUNDMENT ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY. ALL CULVERTS, ROADSIDE DITCHES, BROAD-BASED DIPS, DIVERSION DITCHES, ETC. MUST BE MAINTAINED IN PROPER WORKING ORDER. ANY SOIL THAT IS DISTURBED ALONG THE ACCESS ROAD OR CENTRALIZED WATER IMPOUNDMENT MUST BE REVEGETATED ACCORDING TO THESE PLANS AND THE WVDEP OFFICE OF OIL AND GAS FIELD MANUAL. IF NECESSARY, ALL TEMPORARY BMP MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP. ANY AREAS DISTURBED BY REMOVAL OF THE BMP'S SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDED.

POST USE - WITHIN 6 MONTHS OF THE EXPIRATION OF THE CERTIFICATE OF APPROVAL OF THE CENTRALIZED FRESHWATER IMPOUNDMENT FACILITY, THE SITE SHALL BE CLOSED AND RESTORED TO A PRE-CONSTRUCTION CONDITION. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. DRILL CUTTINGS, DRILLING MUD, AND LINERS FOR WELLS PERMITTED UNDER WV CODE 22-6A AND 35CSR-8, MUST BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SOLID WASTE FACILITY OR, IF THE SURFACE OWNER CONSENTS, THE DRILL CUTTINGS AND ASSOCIATED DRILLING MUD MAY BE MANAGED ON SITE IN A MANNER APPROVED BY THE SECRETARY. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES, AND ASSOCIATED STRUCTURES SHALL BE REMOVED. THE SITE SHALL BE REGRADED AS INDICATED ON THE PLANS TO PRE-CONSTRUCTION GRADES. STOCKPILED TOPSOIL SHOULD BE RE-SPREAD OVER DISTURBED AREA. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS GOOD BONDING TO THE SUB-SOIL CAN BE ACHIEVED. UPON COMPLETION OF THE GRADING, THE SITE SHALL BE SEEDED AND MULCHED PER THE REVEGETATION DETAILS. 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 GRAVEL AND PAVEMENT ACCESS ROADS OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.

NOTE:
1. DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY, ASTM D-698. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.

LEGEND

EX. INDEX CONTOUR	PR. INDEX CONTOUR	700
EX. INTERMEDIATE CONTOUR	PR. INTERMEDIATE CONTOUR	700
EX. PROPERTY LINE	PR. INDEX CONTOUR (ROAD)	
EX. ROAD EDGE OF GRAVEL/DIRT	PR. INTERMEDIATE CTR (ROAD)	
EX. ROAD EDGE OF PAVEMENT	PR. LIMITS OF DISTURBANCE	
EX. ROAD CENTERLINE	PR. WELL HEAD	
EX. DITCHLINE	PR. PERIMETER SAFETY FENCE	
EX. CULVERT	PR. ROAD EDGE OF GRAVEL	
EX. FENCELINE	PR. ROAD CENTERLINE	
EX. OVERHEAD UTILITY	PR. V-DITCH W/ CHECK DAMS (DL)	
EX. POWER POLE/GUY WIRE	PR. CULVERT W/ RIP-RAP	
EX. PIPELINE & WELL	PR. COMP. SOCK DIVERSION	
EX. TREELINE	PR. COMPOST FILTER SOCK	
EX. DELINEATED STREAM	PR. SUPER SILT FENCE	
EX. DELINEATED WETLAND/POND	PR. BORING LOCATION	
EX. BUILDING		
100' WETLAND/STREAM BUFFER DELINEATION STUDY AREA		



MATCHLINE "C"
SEE SHEET 22

NAVITUS
ENERGY ENGINEERING
Telephone: (888) 862-4185 | www.NavitusEng.com

DATE	REVISION

Antero
THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

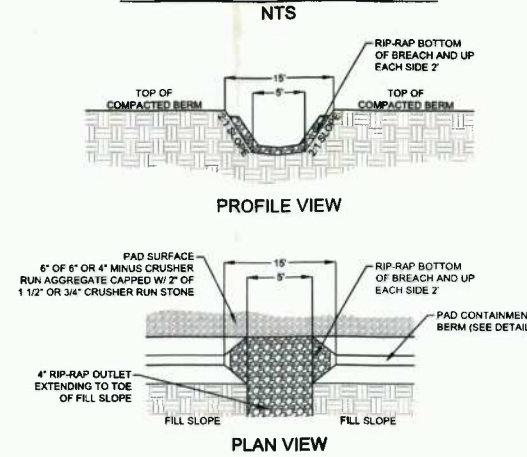
ACCESS ROAD RECLAMATION PLAN
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
SCALE: 1" = 50'
SHEET 23 OF 25

STAGING AREA RECLAMATION PLAN

PAD BERM BREACH DETAIL

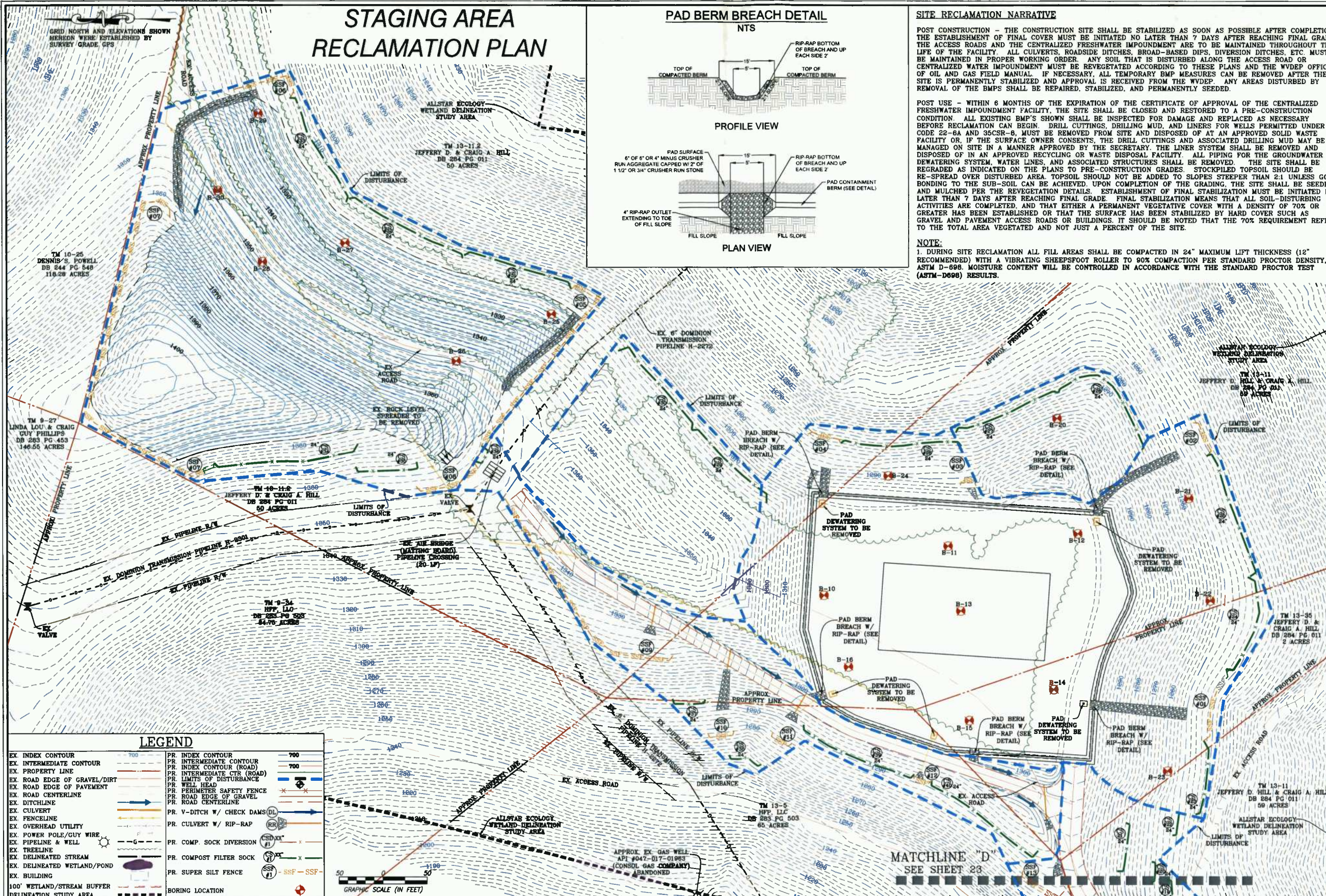


SITE RECLAMATION NARRATIVE

POST CONSTRUCTION - THE CONSTRUCTION SITE SHALL BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. THE ESTABLISHMENT OF FINAL COVER MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. THE ACCESS ROADS AND THE CENTRALIZED FRESHWATER IMPOUNDMENT ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY. ALL CULVERTS, ROADSIDE DITCHES, BROAD-BASED DIPS, DIVERSION DITCHES, ETC. MUST BE MAINTAINED IN PROPER WORKING ORDER. ANY SOIL THAT IS DISTURBED ALONG THE ACCESS ROAD OR CENTRALIZED WATER IMPOUNDMENT MUST BE REVEGETATED ACCORDING TO THESE PLANS AND THE WDEP OFFICE OF OIL AND GAS FIELD MANUAL. IF NECESSARY, ALL TEMPORARY BMP MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WDEP. ANY AREAS DISTURBED BY REMOVAL OF THE BMP'S SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEED.

POST USE - WITHIN 6 MONTHS OF THE EXPIRATION OF APPROVAL OF THE CENTRALIZED FRESHWATER IMPOUNDMENT FACILITY, THE SITE SHALL BE CLOSED AND RESTORED TO A PRE-CONSTRUCTION CONDITION. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. DRILL CUTTINGS, DRILLING MUD, AND LINERS FOR WELLS PERMITTED UNDER WV CODE 22-6A AND 35CSR-8, MUST BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED SOLID WASTE FACILITY OR, IF THE SURFACE OWNER CONSENTS, THE DRILL CUTTINGS AND ASSOCIATED DRILLING MUD MAY BE MANAGED ON SITE IN A MANNER APPROVED BY THE SECRETARY. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES, AND ASSOCIATED STRUCTURES SHALL BE REMOVED. THE SITE SHALL BE REGRADED AS INDICATED ON THE PLANS TO PRE-CONSTRUCTION GRADES. STOCKPILED TOPSOIL SHOULD BE RE-Spread OVER DISTURBED AREA. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS GOOD BONDING TO THE SUB-SOIL CAN BE ACHIEVED. UPON COMPLETION OF THE GRADING, THE SITE SHALL BE SEED AND MULCHED PER THE REVEGETATION DETAILS. 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 GRAVEL AND PAVEMENT ACCESS ROADS OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.

NOTE:
1. DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY, ASTM D-698. MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.



LEGEND

EX. INDEX CONTOUR	PR. INDEX CONTOUR	700
EX. INTERMEDIATE CONTOUR	PR. INTERMEDIATE CONTOUR	700
EX. PROPERTY LINE	PR. INTERMEDIATE CTR (ROAD)	
EX. ROAD EDGE OF GRAVEL/DIRT	PR. LIMITS OF DISTURBANCE	
EX. ROAD EDGE OF PAVEMENT	PR. PERIMETER SAFETY FENCE	
EX. ROAD CENTERLINE	PR. ROAD EDGE OF GRAVEL	
EX. DITCHLINE	PR. ROAD CENTERLINE	
EX. CULVERT	PR. V-DITCH W/ CHECK DAMS (DL)	
EX. FENCELINE	PR. CULVERT W/ RIP-RAP	
EX. OVERHEAD UTILITY	PR. COMP. SOCK DIVERSION	
EX. POWER POLE/GUY WIRE	PR. COMPOST FILTER SOCK	
EX. PIPELINE & WELL	PR. SUPER SILT FENCE	
EX. TREELINE	PR. BORING LOCATION	
EX. DELINEATED STREAM		
EX. DELINEATED WETLAND/POND		
EX. BUILDING		
EX. 100' WETLAND/STREAM BUFFER DELINEATION STUDY AREA		

NAVITUS
ENERGY ENGINEERING
Telephone: (888) 862-4185 | www.NavitusEng.com

NO.	DATE	REVISION

Antero
THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

STAGING AREA RECLAMATION PLAN
LEMLEY
CENTRALIZED FRESHWATER IMPOUNDMENT
GRANT DISTRICT
DODDRIDGE COUNTY, WEST VIRGINIA



DATE: 02/27/2014
SCALE: 1" = 50'
SHEET 24 OF 25