

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: #14-236 Whitehair 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: New Miltont District

Lat/Long: 39.202767N/80.688767W

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:

New Milton District 39.202767N / 80.688767W

Permit #14-236 Whitehair 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

#14-236

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 30, 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 Whitehair Fresh Water Impoundment. Our project is located in Doddridge County, New Milton District and per FIRM maps #54017C0230C and #54017C0235C, this location is not within the floodplain.

Attached you will find the following:

- Doddridge County Floodplain Permit Application
- Whitehair Construction Plans
- WV Flood Tool Map
- FIRM 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: Kelly Surveying
ADDRESS: P.O Box 254, Dalley, WV 26259
TELEPHONE NUMBER: (304)-338-6985

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: New Milton

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 Altercation (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 - site is not 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 and 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 and common boundary</u>	ADDRESS: _____
<u>up or down stream due to the</u>	_____
<u>location 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:  DATE: _____

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

Whitehair FWI

CR-18/13

Whitehair Waste Area:
80.690533 W,
39.202383 N


Center of Whitehair FWI:
80.688767 W,
39.202767 N

Whitehair FWI Site Entrance:
80.687614 W,
39.202494 N



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 6/30/2014

 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: N/A

Location (long, lat):

Location (UTM 17N):

FEMA Issued Flood Map:

Contacts:

CRS Information:

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
That the Accompanying Legal Notice
Entitled:

Floodplain Permit
14-236
Whitehair

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

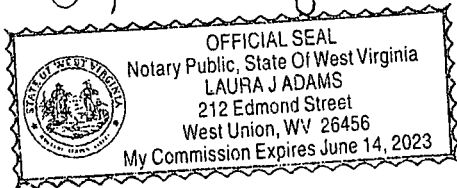
\$ *16.31*
and each publication thereafter
\$ *38.05* TOTAL

EDITOR
Virginia Nicholson

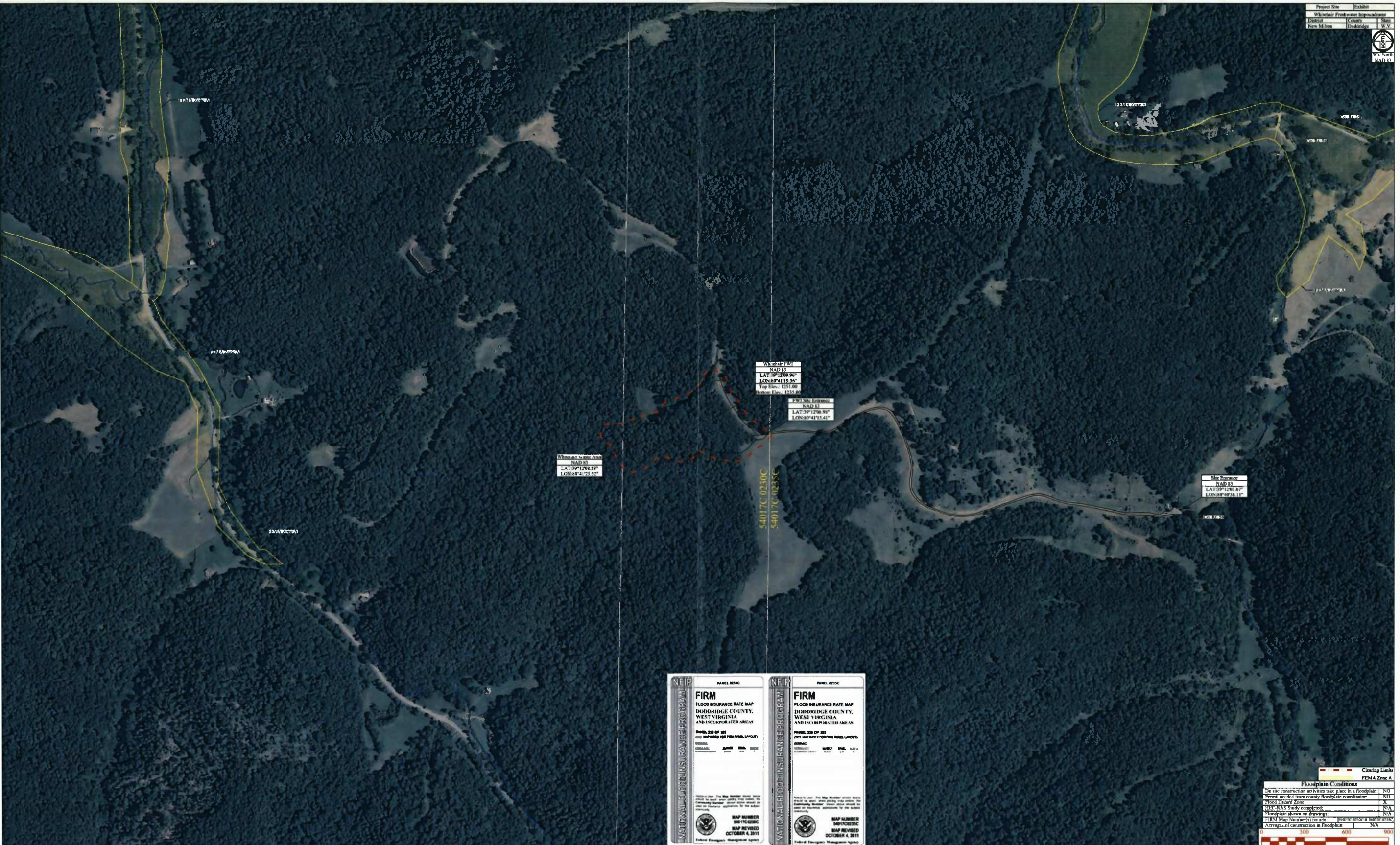
SWORN TO AND SUBSCRIBED
BEFORE ME THIS THE *24th* DAY
OF *July* 2014

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: New Milton
District: 39.202767N/80.688767W Permit # 14-236
Whitehair Freshwater Impoundment
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



Project Site	Exhibit
Whitehair Freshwater Impoundment	
District	County
New Milton	Doddridge
	State
	West Virginia



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

MAP NUMBER: 54017C0230C
MAP REVISED: OCTOBER 4, 2011

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

MAP NUMBER: 54017C0235C
MAP REVISED: OCTOBER 4, 2011

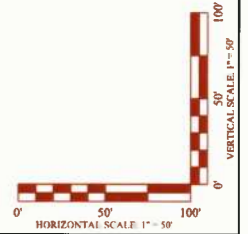
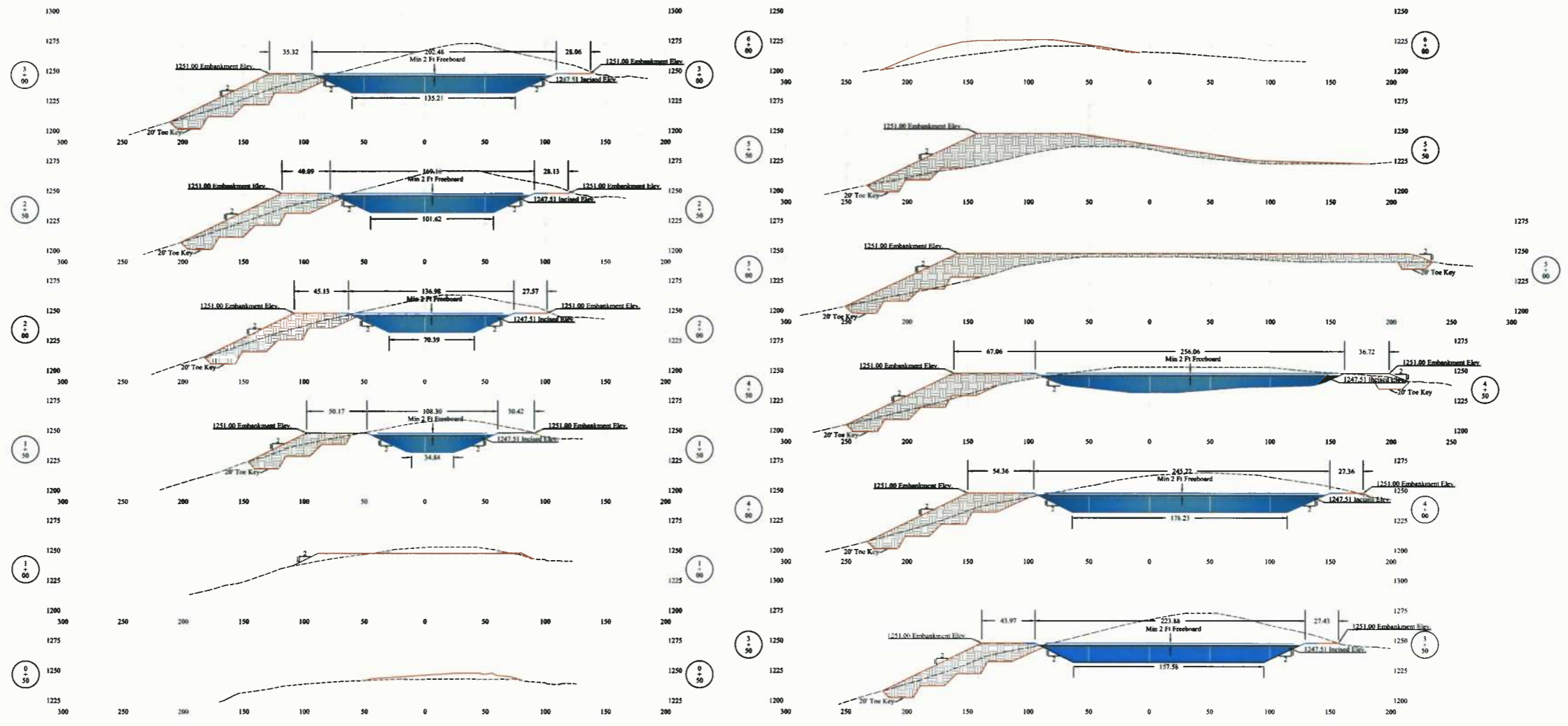
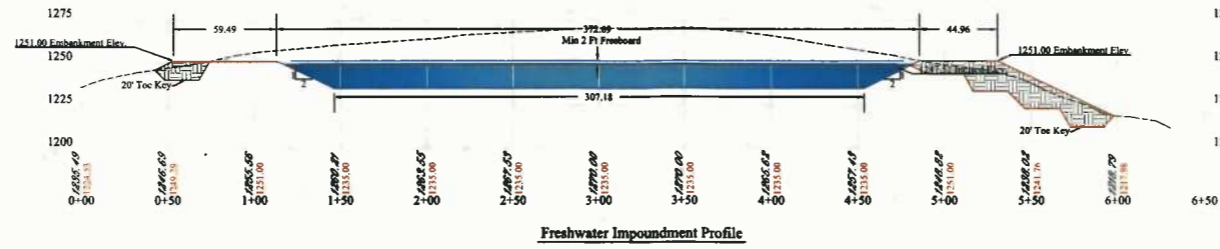
Clearing Limits	
FEMA Zone A	
Floodplain Conditions	
Do site construction activities take place in a floodplain?	NO
Permit needed from county floodplain coordinator?	NO
Flood Hazard Zone	X
DEIR/EAAS Study completed?	N/A
Floodplain shown on drawing?	N/A
FIRM Map Number(s) for site:	54017C 0230C & 54017C 0235C
Accuracy of construction in Floodplain:	N/A

Kelly S. Surveying
District: New Milton
County: Doddridge
State: West Virginia

Whitehair Freshwater Impoundment
FEMA Reference Exhibit

Date:	06-01-2013
Revisions:	Site Design





Original Ground
 Proposed Finished Grade
 Incised Volume
 Water Level
 Engineered Fill

A Geotechnical Engineering Study Was Not Performed For The Purpose of This Design

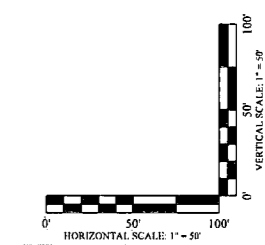
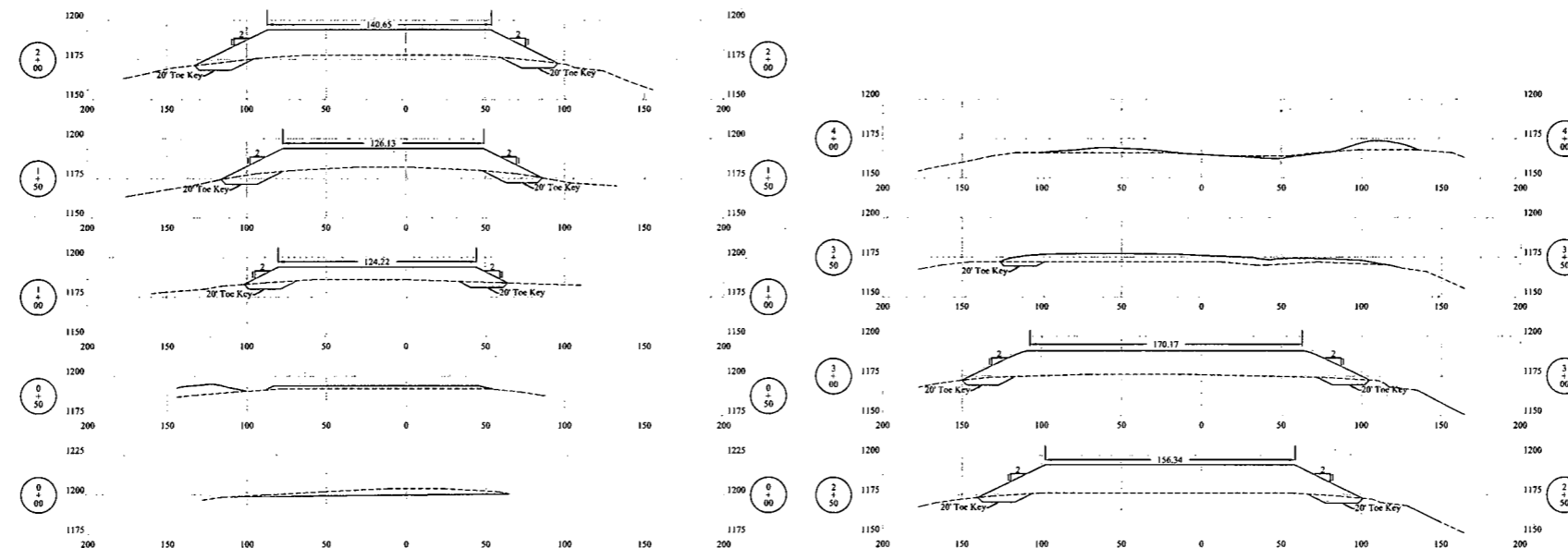
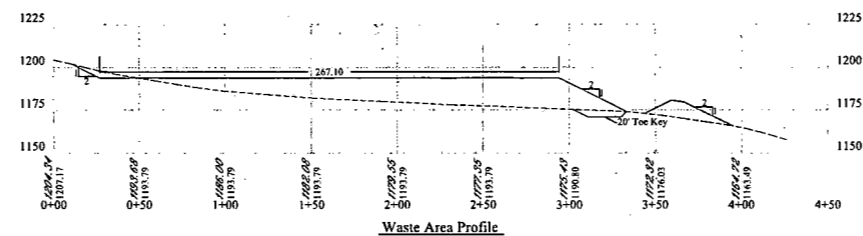


District: New Milton
County: Doddridge
State: West Virginia

Whitehair Freshwater Impoundment
Freshwater Impoundment Cross Sections

Date:	Revisions:
08-01-2013	Site Design





A Geotechnical Engineering Study Was Not Performed For The Purpose of This Design

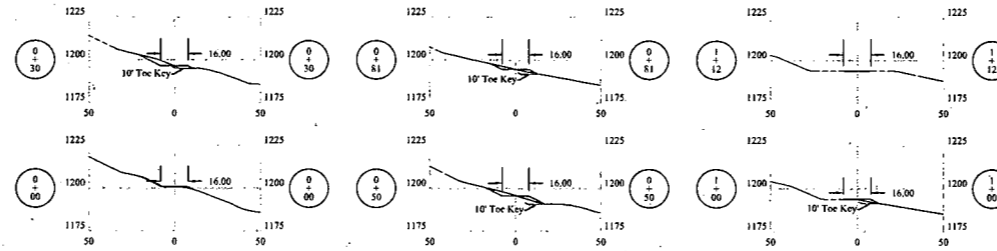


District: New Milton
County: Doddridge
State: West Virginia

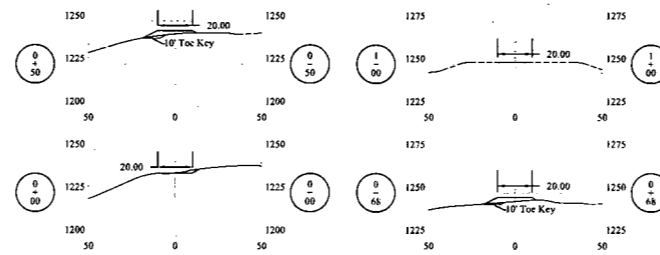
Whitehair Freshwater Impoundment
Waste Area Cross Sections

Date	Revisions
08-01-2013	Site Design

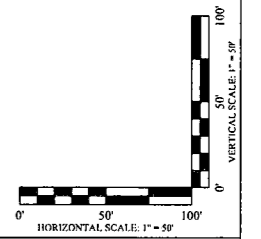




Waste Area Access Road Cross Sections



FWI Access Road Cross Sections



A Geotechnical Engineering Study Was Not Performed For The Purpose of This Design




District: New Milton
County: Doddridge
State: West Virginia

Whitehair Freshwater Impoundment
Access Road Cross Sections

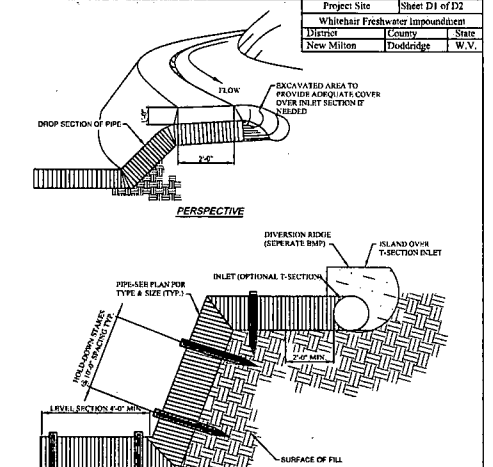
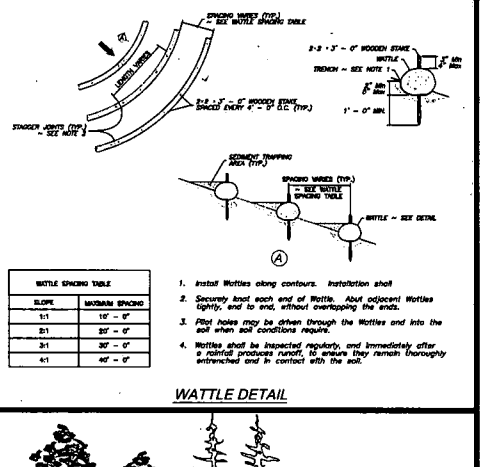
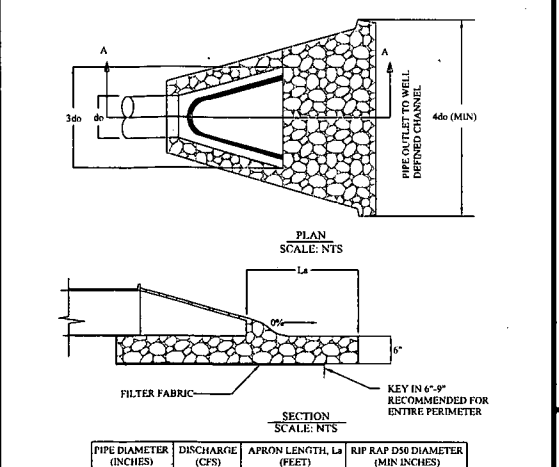
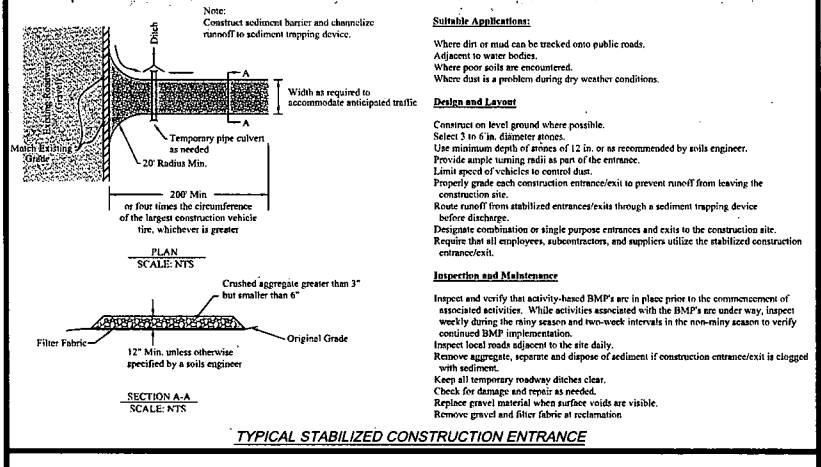
Date:	Revisions
08-01-2013	Site Design

Original Ground
Proposed Finished Grade



STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES

1. Slope height must not exceed 3:1. Slope length must be 2:1 or longer.
2. The operator shall ensure that the approved erosion and sediment control plan is properly implemented. Seeding and Mulching to be in accordance with WVDOT Standard Specifications unless specified otherwise in the plan or in a note specified otherwise by the construction engineer, or unless specified otherwise by the company representative.
3. Until the site achieves final stabilization, the operator shall ensure that the best management practices are implemented, inspected, opened, and maintained. The operator will maintain written inspection logs. All maintenance work, including cleaning, repairs, replacement, upgrading, and modification shall be performed immediately upon discovery of deficiency.
4. Erosion and sediment BMP's must be constructed, installed, and functional before site disturbance begins within the tributary areas of these BMP's.
5. After final site stabilization has been achieved, temporary erosion and sediment BMP's controls shall be removed. Areas disturbed during removal of the BMP's must be stabilized immediately.
6. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% percent vegetative cover or other permanent non-vegetative cover with a density sufficient to retain accelerated surface erosion and subsurface characteristics to retain silt and other non-sediment.
7. At least three (3) days before starting any earth disturbance activity, all contractors involved in those activities shall notify Miss Utility of West Virginia at 1-800-245-4848 for located utility locations.
8. In a timely manner after earth disturbance activities cease, the operator shall stabilize any areas disturbed by the activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not in finished grade and which will be re-disturbed within 1 year must be stabilized in accordance with the temporary vegetative stabilization and specifications. Disturbed areas which are finished grade or which will not be re-disturbed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
9. A stream crossing, if buffer areas should be maintained. On buffers, clearing, and disturbances, excavation, and equipment traffic should be minimized. Activities such as stacking logs, burning cleared brush, discharging of raw sewage from tractors, welding pipe sections, refueling and maintaining equipment should be accomplished outside the buffers.
10. Mulch or erosion control blankets must be installed on all slopes 3:1 and steeper.
11. Sediment removed from BMP's shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains or drainage swales and immediately stabilized, or placed in topsoil stockpiles.
12. Sediment and materials removed from the pad surface shall be pumped to an on-site holding/usage tank and subsequently removed from the site by an approved commercial vendor.

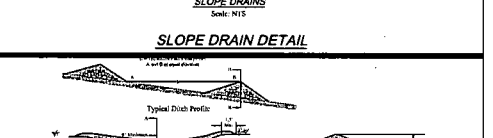
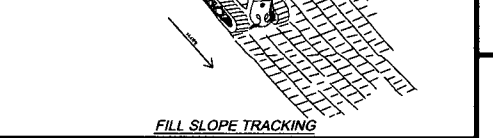
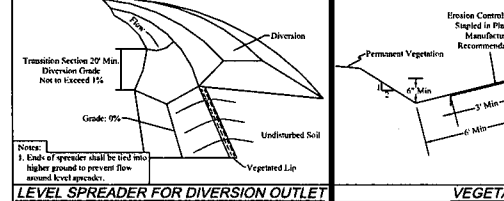
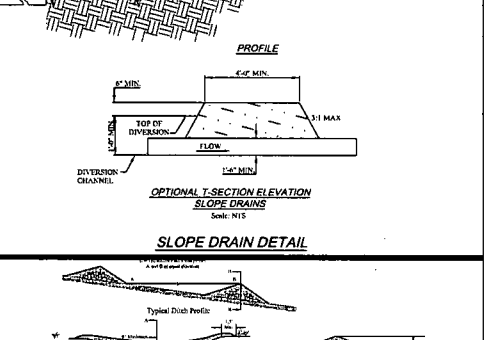
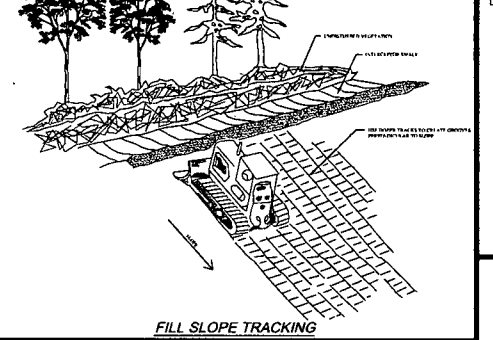
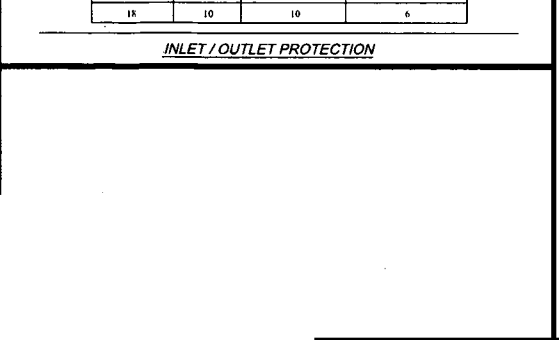
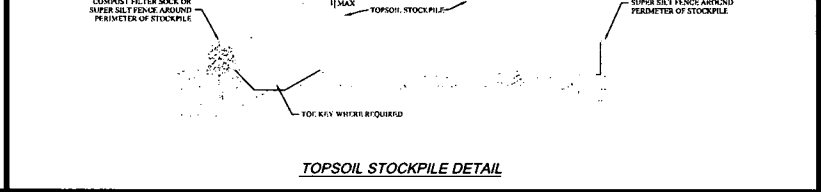


Seeding Chart

Plant Name	Application Rate (Lbs/Acre)	Lining Rate (Lbs/Acre)	Mulch Rate (Lbs/Acre)	Mulch Type
Annual Ryegrass	40	2	2.5	New Mulch

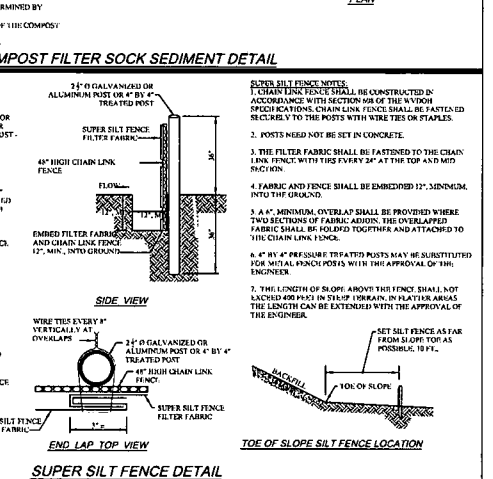
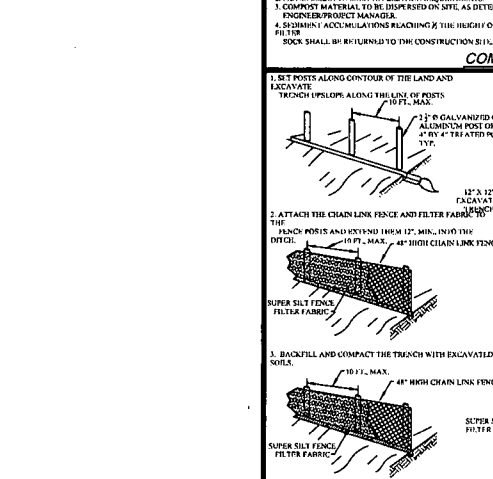
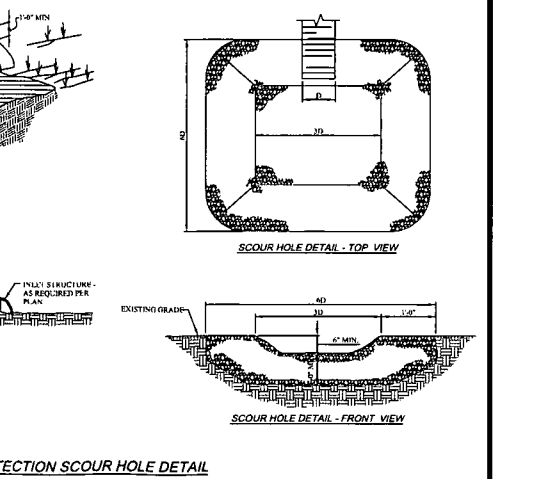
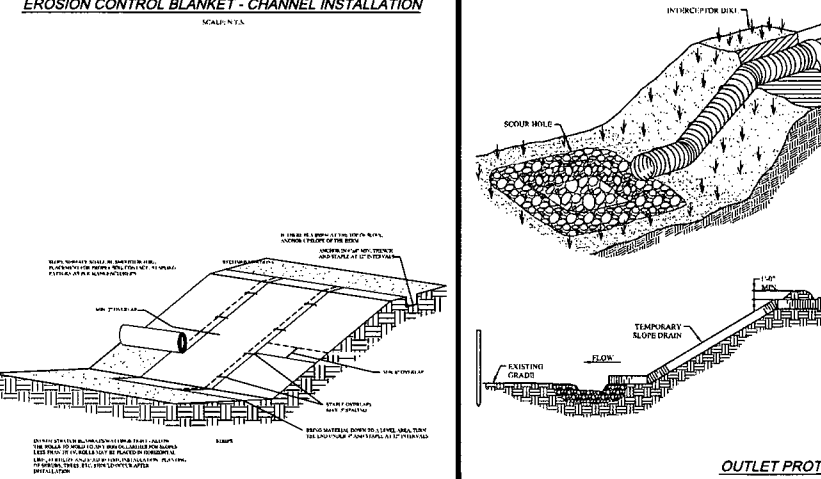
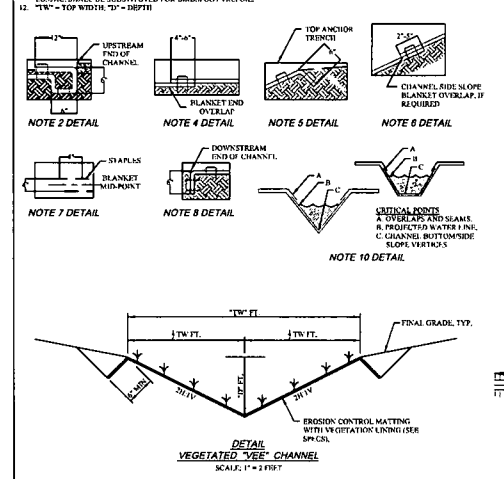
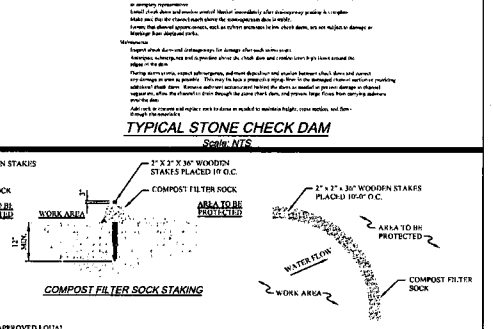
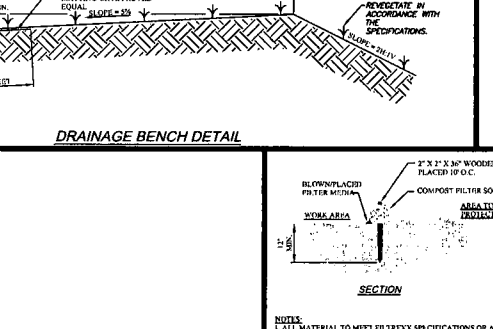
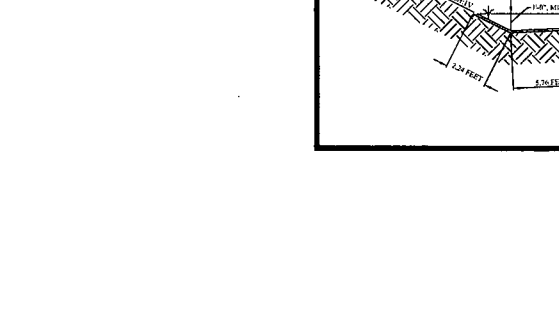
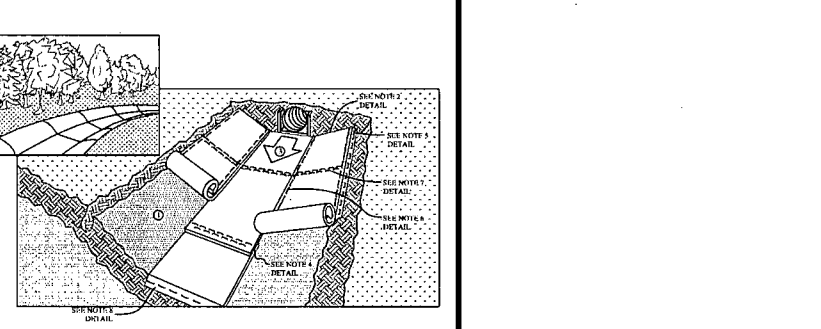
Plant Name	Application Rate (Lbs/Acre)	Lining Rate (Lbs/Acre)	Mulch Rate (Lbs/Acre)	Mulch Type
Perennial Ryegrass	40	3	2.5	Stem Mulch
Coma Vetch	20			

*Or as recommended by a local commercial seed supplier approved by the Designer/Regulator.



NOTES

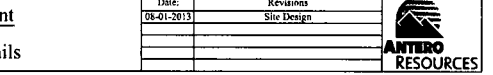
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATIONS OF LIMING, FERTILIZER AND SEED. NOTE: WHEN USING CELLULOSE DO NOT USE PREPARED AREA. CELLULOSE MUST BE INSTALLED WITH PAPER SIDE DOWN BEHIND AT THE TOP OF UPRAMP AND THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDING BEYOND THE UP OR DOWN SLOPE OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FERTILIZER TO REMAINING 12" PORTION OF BLANKET BACK OVER SLOPE AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACING APPROXIMATELY 12" APART TO THE WEST OF THE BLANKET. BLANKETS MUST BE INSTALLED IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL CORRELATE WITH APPROXIMATE TOE AGAINST THE SOIL SURFACE. ALL STAPLES MUST BE INSTALLED IN DIRECTION OF WATER FLOW. BLANKETS IN PLACING STAPLES IN AN APPROXIMATELY 12" TRENCH AS SHOWN IN THE DETAIL PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES SHOULD BE PLACED THROUGH EACH OF THE TRENCHES LOCATED AS SHOWN IN THE DETAIL PATTERN GUIDE. PLACE CONSECUTIVE BLANKETS END OVER END (DOUBLE STITCH) WITH A 4" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
2. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2" - 4" (DEPENDENT ON BLANKET TYPE) AND STAPLED AND STAPLED TO ENSURE PROPER FIT ON THE BLANKET BEING OVERLAPPED.
4. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOD IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
5. THE TERMINAL UP DOWNSTREAM END OF THE CHANNEL, BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. IN CASE SOIL CONDITIONS, THE TYPE OF STAPLES USED MUST BE GREATER THAN 4" MAY BE REQUIRED TO PROPERLY ANCHOR THE BLANKET.
7. HORIZONTAL STAPLE SPACING IS NECESSARY TO ALLOW STAPLES TO STAY IN THE CHANNEL POINTS ALONG THE CHANNEL. SPACING MUST BE PERMANENT STAPLE SPACING. IN ACCORDANCE WITH THE SPECIFICATIONS, SHALL BE USED FOR VENTS A 1/2" CHANNELS ONLY. CROWN VENT CHAIN LINK (VARI) AT 20 LBS/100 YD SHALL BE SUBSTITUTED FOR BROWNSWOOD VENT.
8. 12" - 18" TYP. WIDTH, 12" - 18" DEPTH



Kelly Surver
District: New Milton
County: Doddridge
State: West Virginia

Whitehair Freshwater Impoundment
Erosion and Sediment Control Details

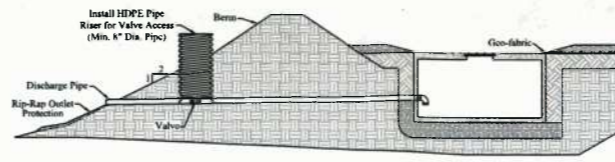
Date: 08-01-2013
Revisions: Site Design



CONSTRUCTION STAKING GUIDE & STANDARD RIBBON COLOR SCHEME

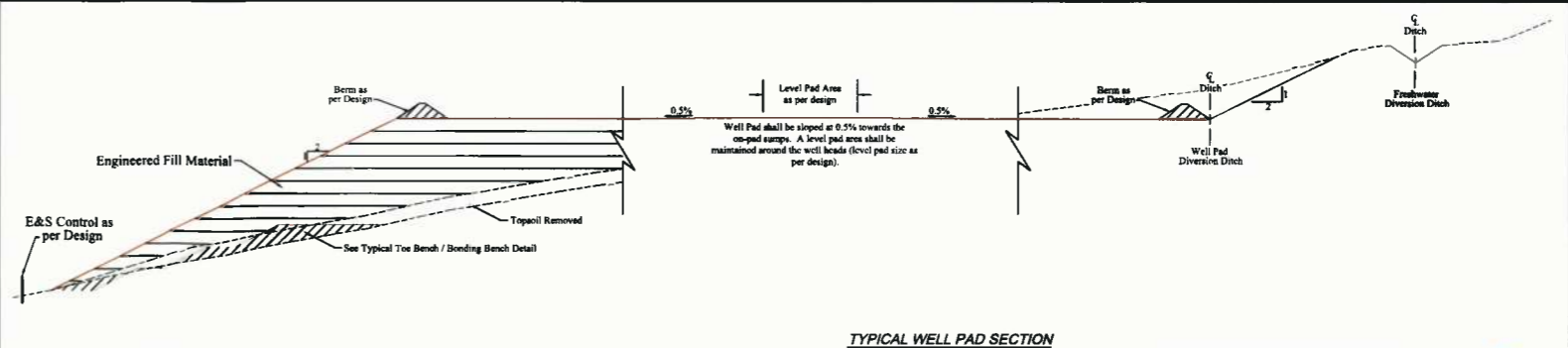
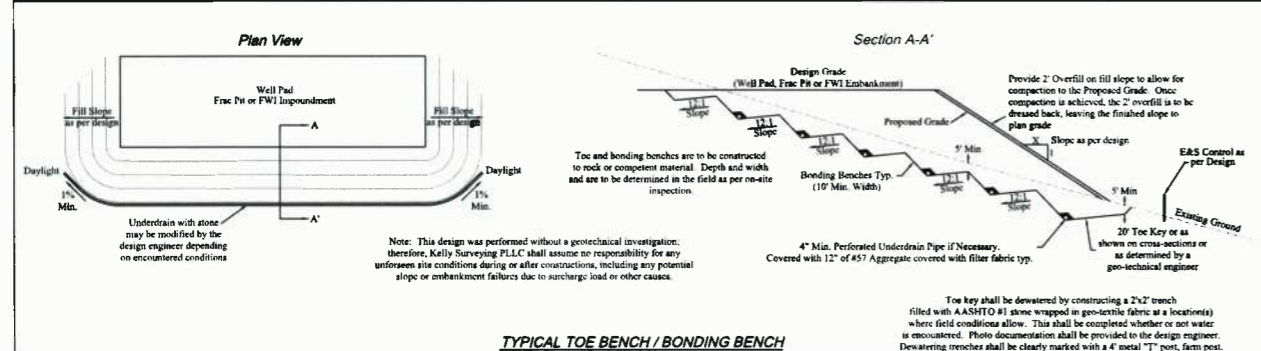
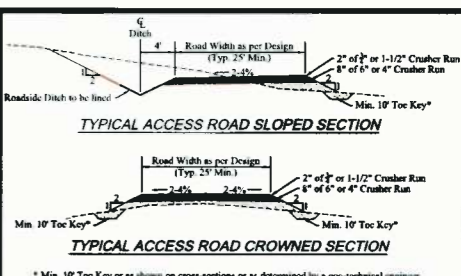
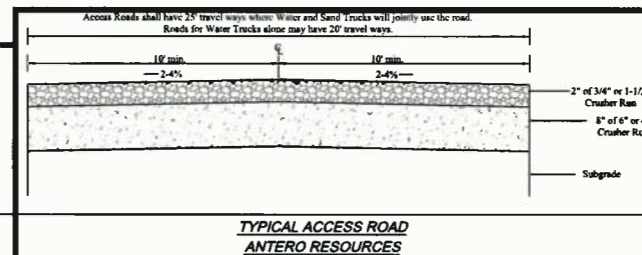
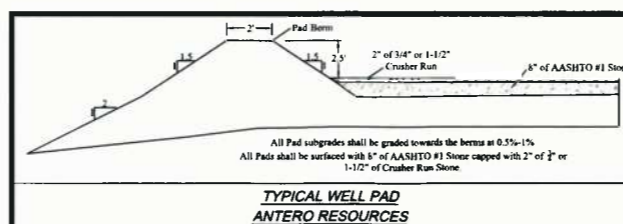
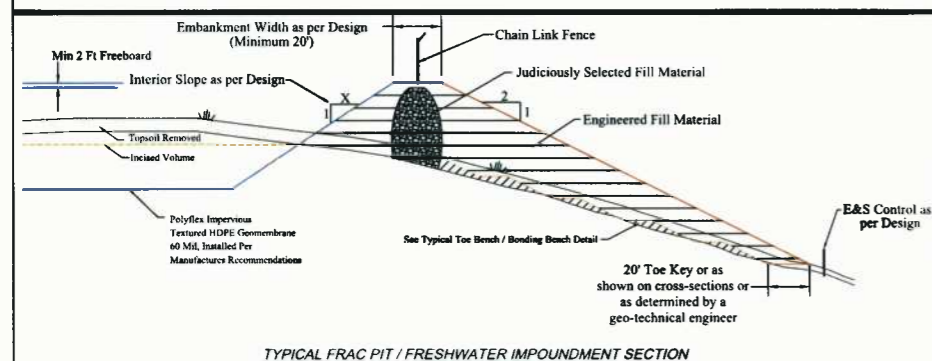
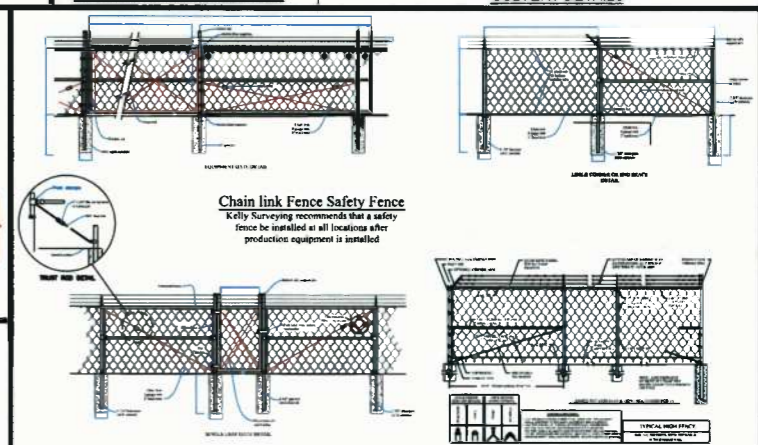
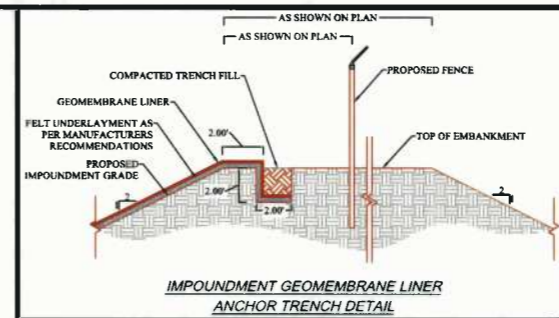
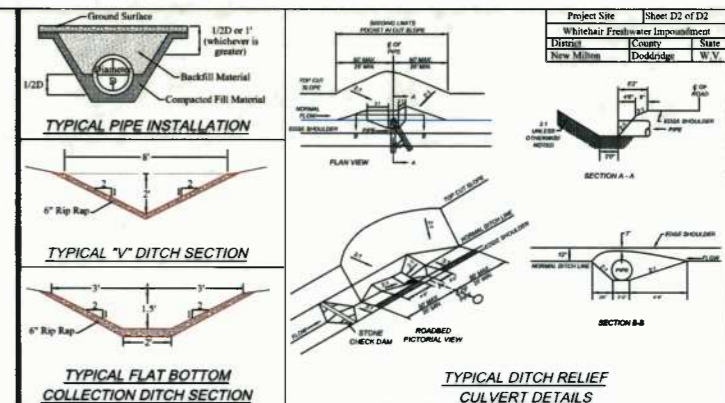
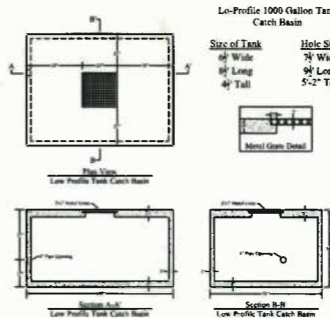


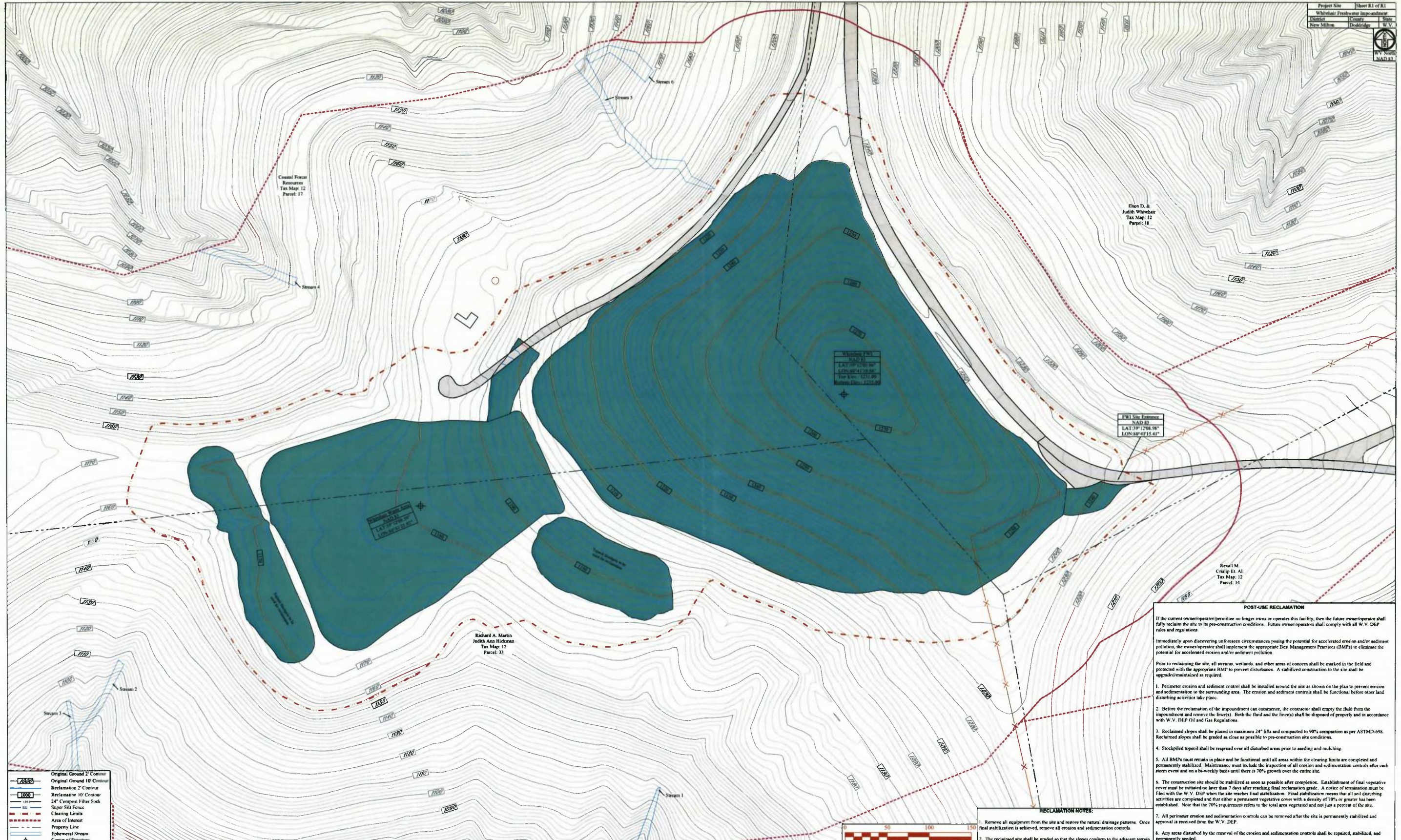
	Yellow Ribbon: Yellow Ribbon used to indicate top of Cuts (C) Cut to be determined at time of stakeout Slope determined by site design		Blue & White Stripe Ribbon: Blue & White Stripe Ribbon used to indicate clearing limits/construction limits
	Yellow and Orange Ribbon: Yellow and Orange Ribbon used to indicate Grade at Top of Pad/Pond/Pit		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
	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 & 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)
	Pink Ribbon: Pink Ribbon used to indicate Top Hole Location Pink Ribbon used to indicate Survey Control Location		Orange & White Stripe Ribbon: Orange & White Stripe Ribbon used to indicate Topsoil Stockpile Locations
	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 Ribbon: Blue Ribbon used to indicate Centerline (CL) Ditch Blue Ribbon used to indicate Bottom (BTM) Softwood Traps



Water collected from the pad area will not be discharged from the sumps during drilling activities. Once drilling activities are complete, the valve will remain closed until water standards are acceptable for discharge.

ON-PAD SUMP DETAIL





POST-USE RECLAMATION

If the current owner/operator/permittee no longer owns or operates this facility, then the future owner/operator shall fully reclaim the site in its pre-construction condition. Future owner/operators shall comply with all W.V. DEP rules and regulations.

Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the owner/operator shall implement the appropriate Best Management Practices (BMPs) to eliminate the potential for accelerated erosion and/or sediment pollution.

Prior to reclaiming the site, all streams, wetlands, and other areas of concern shall be marked in the field and protected with the appropriate BMP to prevent disturbance. A stabilized construction to the site shall be upgraded/maintained as required.

- Perimeter erosion and sediment control shall be installed around the site as shown on the plan to prevent erosion and sedimentation to the surrounding area. The erosion and sediment controls shall be functional before other land disturbing activities take place.
- Before the reclamation of the impoundment can commence, the contractor shall empty the fluid from the impoundment and remove the liners. Both the fluid and the liner(s) shall be disposed of properly and in accordance with W.V. DEP Oil and Gas Regulations.
- Reclaimed slopes shall be placed in maximum 24' lifts and compacted to 90% compaction as per ASTM D-698. Reclaimed slopes shall be graded as close as possible to pre-construction site conditions.
- Stockpiled topsoil shall be respread over all disturbed areas prior to seeding and mulching.
- All BMPs must remain in place and be functional until all areas within the clearing limits are completed and permanently stabilized. Maintenance must include the inspection of all erosion and sedimentation controls after each storm event and on a bi-weekly basis until there is 70% growth over the entire site.
- The construction site should be stabilized as soon as possible after completion. Establishment of final vegetative cover must be initiated no later than 7 days after reaching final reclamation grade. A notice of termination must be filed with the W.V. DEP when the site reaches final stabilization. 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. Note that the 70% requirement refers to the total area vegetated and not just a percent of the site.
- All perimeter erosion and sedimentation controls can be removed after the site is permanently stabilized and approval is received from the W.V. DEP.
- Any areas disturbed by the removal of the erosion and sedimentation controls shall be repaired, stabilized, and permanently seeded.

RECLAMATION NOTES:

- Remove all equipment from the site and restore the natural drainage patterns. Once final stabilization is achieved, remove all erosion and sedimentation controls.
- The reclaimed site shall be graded so that the slopes conform to the adjacent terrain.



Kelly Surveying
 District: New Milton
 County: Doddridge
 State: West Virginia

**Whitehair Freshwater Impoundment
 Site Reclamation**

Date	Revisions
08-07-2013	Site Design

