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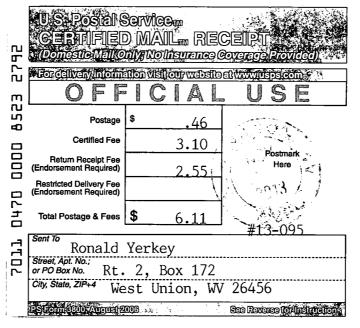
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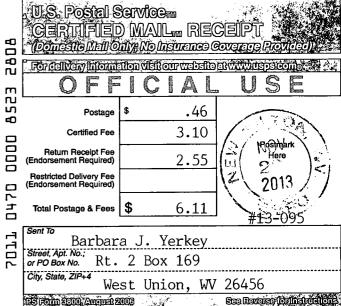
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SENDER: COMPLETE THIS SECTION	MARGE IE THIS SECTION ON DELIVERY		
Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.  Print your name and address on the reverse so that we can return the card to you.  Attach this card to the back of the mailpiece, or on the front if space permits.  1. Article Addressed to: #13-095  Ronald Yerkey Rt. 2, Box 72  West Up on, V	B. Received by (Printed Name)  C. Date of Delivery  C. Date of Delivery  Debbic Level 11-27-13  D. Is delivery addless different from item 1?  Yes  If YES, enter delivery address below:		
FILE BETHAR	3. Service Type    Xight   Color   Color     Registered   Return Receipt for Merchandise     Insured Mail   C.O.D.     Restricted Delivery? (Extra Fee)   Yes		
2. Article Number (Transfer from service label) 7011 0470	0000 8523 2792		
PS Form 3811, February 2004 Domestic Ret	turn Receipt 423505 02-M-1540		

Temp. Brodge
# 42740= 1000 pm

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Call Slayne

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY		
<ul> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	B. Received by (Printed Name) C. Date of Delivery  WILLIA ON COUNTY  1-23-13		
1. Article Addressed to: #13-095	D. Is delivery address different from item 1?  Yes  If YES, enter delivery address below:  No		
William & Deanna Davis Rt. 2, box 168 West Union, WV 26456			
<b>L</b>	3. Service Type  XX Certifled Mail		
	4. Restricted Delivery? (Extra Fee) ☐ Yes		
2. Article Number (Transfer from service label) 7011 0470	0000 8523 2815		
PS Form 3811, February 2004 Domestic Reti	urn Receipt 102595-02-M-1540		

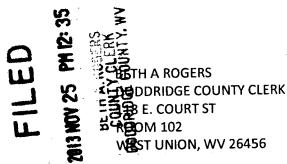
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UNITED STATES POSTAL SERVICE



First-Class Mail Postage & Fees Paid USPS Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •



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water the same	X Tong Or Section	*
SENDER: COMPLETE THIS SECTION	COMPLETE THIS S	SECTION ON DELIVERY
<ul> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reveso that we can return the card to you.</li> <li>Attach this card to the back of the mailpior on the front if space permits.</li> </ul>	B. Received by (Pr	lerkey 1/23-13
1. Article Addressed to: #13-095		ss different from tem 1?  Yes ivery address below:  No
Barbara J. Yerkey Rt. 2, Box 169 West Union, WV 26456	e en to	
	3. Service Type  □XXertifled Mall  □ Registered □ Insured Mail	☐ Express Mail ☐ Return Receipt for Merchandise ☐ C.O.D.
	4. Restricted Delive	ny? (Extra Fee) ☐ Yes
2. Article Number (Transfer from service label) 7011	0470 0000 8523	2808
PS Form 3811, February 2004 D	omestic Return Receipt	102595-02-M-5540

United States Postal Service

First-Class Mail Postage & Fees Paid USPS Permit No. @1

Sender: Please print your name, address, and ZIP+4 in this box ' **BETH A ROGERS** DODDRIDGE COUNTY CLERE 118 E. COURT ST **ROOM 102** WEST UNION, WV 26456



Vendor Name  DODDRIDGE COUNTY COMMISSION			Vendor No.	Date	Check Number	Check Total
			43312	Dec-03-2013 43699		\$500.00
VOUCHER	VENDOR INV #	INV DATE	TOTAL AMOUNT	PRIOR PM & DISCOU		NET AMOUNT
12-AP-697	EANWATERLINE	12/03/13	500.00	0.0	0	500.00
Canton Ter TOTAL INVO	cerline			500.00		

Peal Jam to Forest Waterhine Temporary Bridge

DETACH AND RETAIN FOR TAX PURPOSES

By: BH - MEH - AML

W. C .Underwood Jr. **Sheriff of Doddridge County** 

**Asst. Chief Tax Deputy** 

The Person paying Money into the Treasury shall forthwith file one of these Receipts with the County Clerk

## **Doddridge County, West Virginia**

1057 No.

December 6, 2013 Date:

\*\*\*Customer copy\*\*\*

#13-095 antero peal Jam to Forest Waterline Temporary Brid Received:

\$500.00

In Payment For:

**Building Permits (LP)** 318

12-Flood Plain Ordinance #20 **Fund** For:

By: BH - MEH - AML

Asst. Chief Tax Deputy

W. C .Underwood Jr. **Sheriff of Doddridge County** 

Doddridge County Flood Plain Application Fee Calculator (if in Flood Plain)				
North/ South Canton Temporary Bridge				
Estimated Construction Costs \$55,000.00				
Amount over \$100,000	\$0.00			
Drilling Oil and Gas Well Fee	\$1,000.00			
\$5 per \$1,000 over \$100,000	\$0.00			
Amount Due with application	\$1,000.00			

\$500.00

## LOCATION PERMIT FEES

	Accessory Building and/or Structures	
	(examples: garage, storage or farm building, carport)	
	Additions and/or Renovations to Single Family Residential of Manufacture Homes	
	<u>UP TO \$50,000.00</u>	
	Additions and/or Renovations to Single Family Residential or Manufacture Homes	
	OVER \$50,000.00 \$10.00	
	Single Family Residential UP TO \$50,000.00	
7	Manufactured Homes - described as having permanent axle and frameNONE	
	<u>Multi-Family</u>	
	Residential and other buildings and structures, including additions and	
	renovations to existing structures.	
	New Commercial Structures or Renovations to existing Commercial Structures.	
	Commercial Land Use Changes and Land Altering Activities	
	(includes buildings used for business purposes the total costs of which do not exceed \$50,000.00.)	
	New commercial Structures or Additions or Renovations to Existing Commercial	
	Structures, Commercial Land Use Changes and Land Altering Activities \$350.00	
	(the total costs of which exceed \$50,000.00 plus \$2.00 per \$1,000.00 to cover costs over \$50,000.00)	
_	New Industrial Structures or Additions or Renovations to Existing Industrial	Total cost
	Structures, changes in Land Use and Land Altering Activities for Industrial \$500.00	Total cost for Tempora Bridge = cor
_	purposes. (the total costs of which do not exceed \$100,000.00)	/Bridge = 900 \$55.8
	New Industrial Structures or Additions or Renovations to Existing Industrial	٠, ١
	Structures, changes in Land Use and Land Altering Activities for Industrial \$1,000.00	
	purposes. (the total costs of which exceed \$100,000.00 plus \$5.00 per \$1,000.00 in	
	costs over \$100,000.00.)	
	FEE FOR DRILLING OIL & GAS WELL\$1,000.00 IN FEMA DESIGNATE & FLOOD PLAIN	
	Maximum Fee: In no event shall any Location Permit Fee charged under this Ordinance	
	Maximum Fee: In no event shall any Location Permit Fee charged under this Ordinance exceed the sum of \$100,000.00.	

#### **Legal Advertisement:**

#### **Doddridge County**

#### Floodplain Permit Application

Please take notice that on the 21st day of Novermber, 2013

## ANTERO RESOURCES CORPORATION – PEARL JAM TO FOREST WATER LINE TEMPORARY BRIDGE PERMIT #13-095

filed an

application for a Floodplain Permit to develop land located at or

about: SURFACE OWNERS: RONALD YERKEY, GRANT DISTRICT,

**DEED BOOK: 275/64, TAX MAP: 9/9** 

The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours.

Any interested persons who desire to comment shall present the same in writing by **December 11, 2013.** 

Delivered to the:

Clerk of the County Court

118 E. Court Street, West Union, WV 26456.

Beth A Rogers, Doddridge County Clerk

Dan Wellings, Doddridge County Flood Plain Manager

TRANSACTION REPORT

NOV-21-2013 THU 01:06 PM

FOR: DODDRIDGE CO. CLERK

304 873 1840

SEND

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Legal Advertisement:

Doddridge County

Floodplain Permit Application

Please take notice that on the 21<sup>st</sup> day of Novermber, 2013
ANTERO RESOURCES CORPORATION – PEARL JAM TO
FOREST WATER LINE TEMPORARY BRIDGE PERMIT #13-095

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Clerk of the County Court

118 E. Court Street, West Union, WV 26456.

Beth A Rogers, Doddridge County Clerk

Dan Wellings, Doddridge County Flood Plain Manager

## DODDRIDGE COUNTY FLOODPLAIN DEVELOPMENT PERMIT

PURPOSE FOR PERMIT: Temporary bridge	
ISSUED TO Antero 1625 17TH STREET	-
ADDRESS: BENVER CO.	
PROJECT ADDRESS: BIG FLINT RUN	
ISSUED BY: Dan W. ollan	-
DATE: 12/1/2013  CONSTRUCTION MUST START WITHIN 180 DAYS FROM ISSUED DATE. PERMIT EXPIRES IN 12 MOI ISSUED DATE. IF EXTENTION IS NEEDED A REQUEST MUST BE MADE IN WRITING STATING A REASON.	NTHS FROM SON FOR THE
EXTENTION.	j. ji
THIS PERMIT MUST BE POSTED ON THE PREMISES IN A CONSPICUOUS PLACE SO AS TO E	E CLEARLY
VISIBLE FROM THE STREET.	



November 15, 2013

Antero Resources 1625 17th Street Denver, Colorado 80202 Office 303.357.7310 Fax 303.357.7315

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

Mr. Wellings:

Antero Resources Corporation (Antero) would like to submit a Doddridge County Floodplain permit application for our North/South Canton Temporary Road Bridge. Our project is located in Doddridge County, Grant District. Per the enclosed hydrologic analysis study, "no adjacent structures are anticipated to be impacted by the temporary bridge."

Attached you will find the following:

- > Doddridge County Floodplain Permit Application and required fees
- ➤ FIRM Map
- ➤ Plat Exhibit
- > Stream Crossing Floodplain Analysis

If you have any questions please feel free to contact me at (303) 357-6820.

Thank you in advance for your consideration.

Sincerely,

Shauna Redican

Permit Representative

Antero Resources Appalachian Corporation

**Enclosures** 

## **Antero Resources Corporation**

## Pearl Jean Impoundment to Forest Pad Water Line (North/South Canton) Access Road Temporary Bridge

THRASHER GROUP, INC. PROJECT # 101-010-0715

## DODDRIDGE COUNTY FLOODPLAIN PERMIT



# # 13-095 Pearl Jan to DODDRIDGE COUNTY Forest Water Line Temporary Bridge 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	: lu Metro	
	8	
DATE_	November 15, 2013	

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 Resources Corporation - Kevin Kilstrom, VP of Production	
ADDRESS: 1625 17th Street Denver, CO 80202	_
TELEPHONE NUMBER: Contact Shauna Redican: 303-357-6820	_

BUILDER'S NAME: Unknown at this time
ADDRESS:
TELEPHONE NUMBER:
ENGINEER'S NAME: Jeff Gola, PE, Thrasher Group, Inc
ADDRESS: 600 White Oaks Blvd, Bridgeport, WV, 26330
TELEHONE NUMBER: (304) 624-4108
PROJECT LOCATION:
NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT)
ADDRESS OF SURFACE OWNER/OWNERS (IE NOT THE ADDITIONALLY)
ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT)
DISTRICT:
DATE/FROM WHOM PROPERTY
PURCHASED:
- 110 DOOK DESCRIP 11014.
DLED BOOK REFERENCE:
TAX MAP REFERENCE:
EXISTING BUILDINGS/USES OF PROPERTY:
NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT
PROPERTY
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

	ACI	IVIIY				STRUCTUE	RAL TYPE	
0 0 0 0 0	New Structu Addition Alteration Relocation Demolition Manufactur		oil Home		0 8 0 0	Residential ( Non-residen	(1 – 4 Family) (more than 4 Fa Itial (floodproof Ise (res. & com.)	fing)
В.	OTHER DEV	EOPLN	MENT ACTIV	ITIES:				
0 0 0 0 0 8 0 0	Watercourse Drainage Imp Road, Street Subdivision (	e Alterca provem , or Brid includinater or	Mining  for STRUCTUR  ation (includin  ents (includin  ige Constructi  ng new expan  Sewer System  y)	ng dredging culvert on sion)	ng and cl	T checked abo		
3.	SUBMIT ALL IF STANDARI SKETCH ON A THE LOT. SH INDICATING STRUCTURES SIGN AND DA	STAND D SITE F A SEPAR OW TH BUILDIN OR LAN	PLANS HAVE NATE 8 ½ X 11 E LOCATION CONG SETBACKS, ND USES ON TESTER SKETCH.	NS, IF AN NOT BEEN INCH SHE OF THE IN SIZE & H	I PREPAI EET OF PA TENDED EIGHT. I ERTY.	RED: APER THE SHA CONSTRUCTI DENTIFY EXIS	APE AND LOCAT ON OR LAND U: TING BUILDING	SE SS,
							EVELOPMENT CT PROPOSE	

D. ADJACENT AND/OR AFFECTED LANDOWNERS:

CONSTRUCTION PROJECT IS WITHIN THE FLOODPLAIN \$ 55,000.00

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).

AIVIE:	NAME:			
DDRESS:	ADDRESS:			
AME:				
DDRESS:	ADDRESS:			
LOCATED UPON ANY ADJACENT PRO APPLICATION IS FILED AND THE NAM	NAME:			
NAME:ADDRESS:	NAME:			

#### 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.

#### **Project Location Property Owner**

Dist. Name	Dist	Мар	Par	Sub	Owner	Address	City, St., Zip	Location	Book	Page	Legal Desc.
GRANT	3	9	9		YERKEY RONAL D	RT 2 BOX 172	WEST UNION, WV 26456	RT 3	275	64	BIG FLINT 74.5 AC

## **Adjacent Property Owner \*Below**

Dist. Name	Dist	Мар	Par	Sub	Owner	Address	City, St., Zip	Location	Book	Page	Legal Desc.
GRANT	3	9	11		YERKEY RONAL D	RT 2 BOX 172	WEST UNION, WV 26456	RT 3	275	64	BIG FLINT 42.8 AC
GRANT	3	9	23		YERKEY RONAL D	RT 2 BOX 172	WEST UNION, WV 26456	OFF RT 3	275	64	BIG FLINT 34.5 AC
GRANT	3	9	24		YERKEY BARBA RA J	RT 2 BOX 169	WEST UNION, WV 26456	RT 3	WB3 9	435	BIG FLINT 54.93 AC
GRANT	3	9	24	1	DAVIS DEANN A & WILLIA M (SURV)	RT 2 BOX 168	WEST UNION, WV 26456		215	129	BIG FLINT .35 AC

## **Adjacent Property Owners \*Above**

Dist. Name	Dist	Map	Par	Sub	Owner	Address	City, St., Zip	Location	Book	Page	Legal Desc.
GRANT	3	9	19		YERKEY RONAL D	RT 2 BOX 172	WEST UNION, WV 26456	RT 3	275	64	BIG FLINT 26 AC

- (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.

NAN	ME (PRINT): Kevin Kilstrom, VP of Production	
SIGN	NATURE: (LU) (LI)	<b>DATE:</b> November 15, 2013
Afte Adm	r completing SECTION 2, APPLICANT should submit form to ninistrator/Manager or his/her representative for review.	o Floodplain
SEC Adn	TION 3: FLOODPLAIN DETERMINATION (to be corninistrator/Manager or his/her representative)	npleted by Floodplain
THE	PROPOSED DEVELOPMENT:	
THE	PROPOSED DEVELOPMENT IS LOCATED ON:	
FIRM Date	1 Panel:	
[]	Is <u>NOT</u> located in a Specific Flood Hazard Area (Notify aper) was complete and <b>NO FLOOPLAIN DEVELOPMENT PERMI</b>	oplicant that the application
X	Is located in Special Flood Hazard Area.  FIRM zone designation  100-Year flood elevation is:    A	NGVD <del>(MSL)</del>
[]	Unavailable	
0	The proposed development is located in a floodway. FBFM Panel No	Dated
[]	See section 4 for additional instructions.	

[]

SIGNED Dan Welten

DATE 12/11/2013

## 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.

D .	A plan showing the location of all existing structures, water bodies, adjacent roads, lot dimensions and proposed development.
0	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 elevationFt. 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:											
***************************************											
TION E. DEDI	MIT DETERMINATION (T. I.										
	MIT DETERMINATION (To be completed by Floodplain ator/Manager or his/her representative)										
provisions o County on M	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 Doddridg County on May 21, 2013. The permit is issued subject to the conditions attached to and made part of this permit.										
SIGNED	DATE										
with the pro	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	S:										

## 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 isFT. NGVD (MSL)
2	Actual (As Built) elevation of floodproofing isFT. NGVD (MSL)
Note: appli	: Any work performed prior to submittal of the above information is at risk of the cant.
SECT	TION 7: COMPLIANCE ACTION (To be completed by the Floodplain
<u>Adm</u>	inistrator/Manager or his/her representative).
as ap	loodplain Administrator/Manager or his/her representative will complete this section plicable based on inspection of the project to ensure compliance with the Doddridge ty Floodplain Ordinance.
IN	ISPECTIONS:
	DATE:BY: DEFICIENCIES ? Y/N
cc	DMMENTS
<u>SECTI</u>	ION 8: CERTIFICATE OF COMPLIANCE (To be completed by Floodplain
Admi	nistrator/Manager or his/her representative).
Certifi	Cate of Compliance issued: DATE:

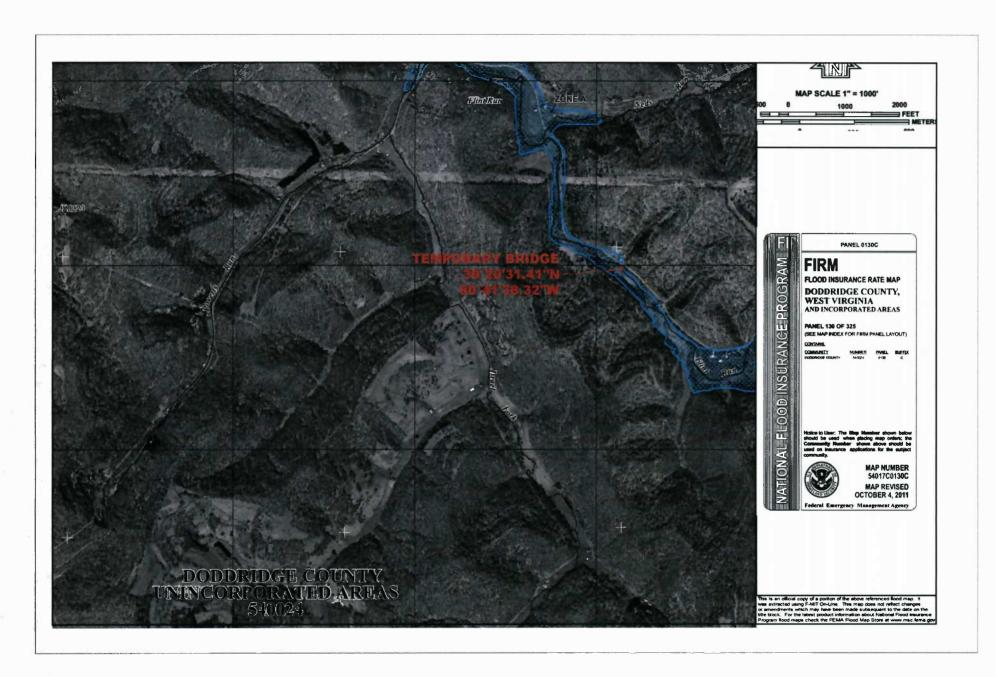
## CERTIFICATE OF COMPLIANCE FOR DEVELOPMENT IN SPECIAL FLOOD HAZARD AREA (OWNER MUST RETAIN)

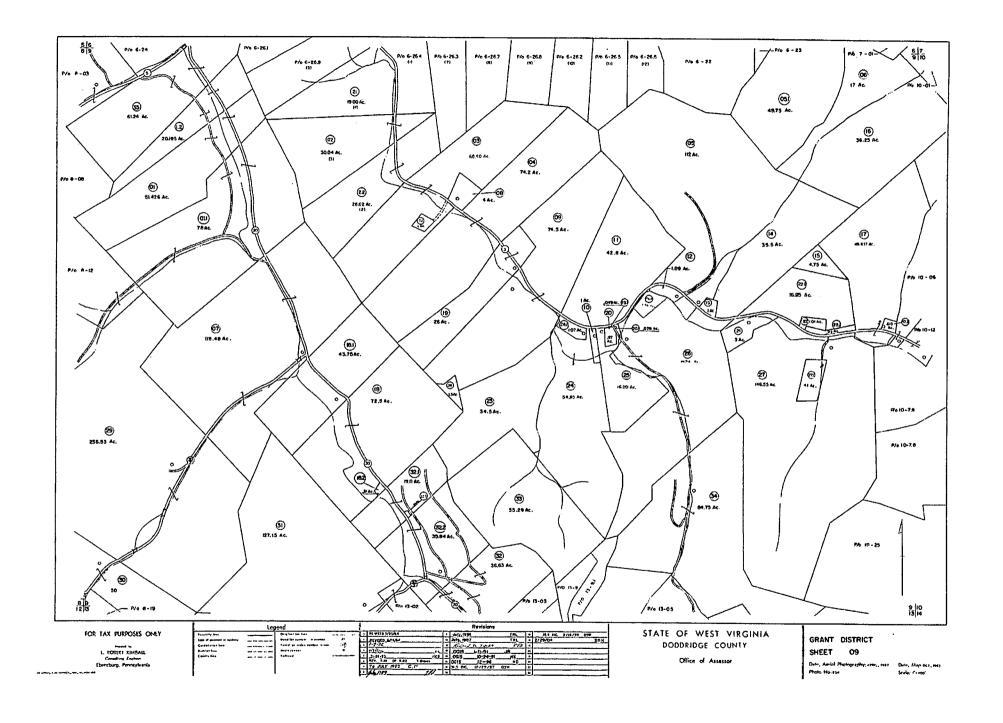
PERMIT NUMBER: PERMIT DATE:	
PURPOSE —	
CONSTRUCTION LOCATION:	
DWNER'S ADDRESS:	
HE FOLLOWING MUST BE COMPLETED BY THE FLOODPLAIN DMINISTRATOR/MANAGER OR HIS/HER AGENT.	
COMPLIANCE IS HEREBY CERTIFIED WITH THE REQUIREMENT OF THE LOODPLAIN ORDINANCE ADOPTED BY THE COUNTY COMMISSION OF ODDRIDGE COUNTY ON MAY 21, 2013.	
GNEDDATE	

Antero 13-095







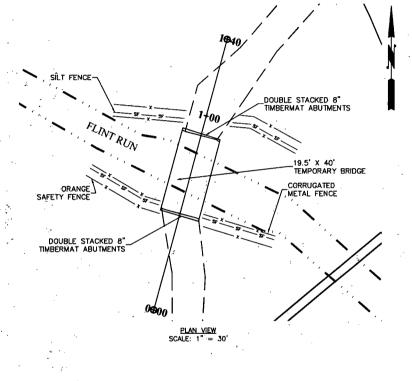


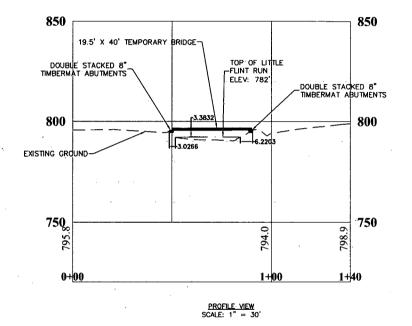
٠,

= PERMANENT RIGHT-OF-WAY
= CONSTRUCTION RIGHT-OF-WAY
= PROPOSED 20" STEEL GAS LINE
= CORRUGATED METAL FENCE

sr = SILT FENCE x = ORANGE SAFETY FENCE = EDGE OF STREAM

= EXISTING GROUND = PIPELINE PROFILE



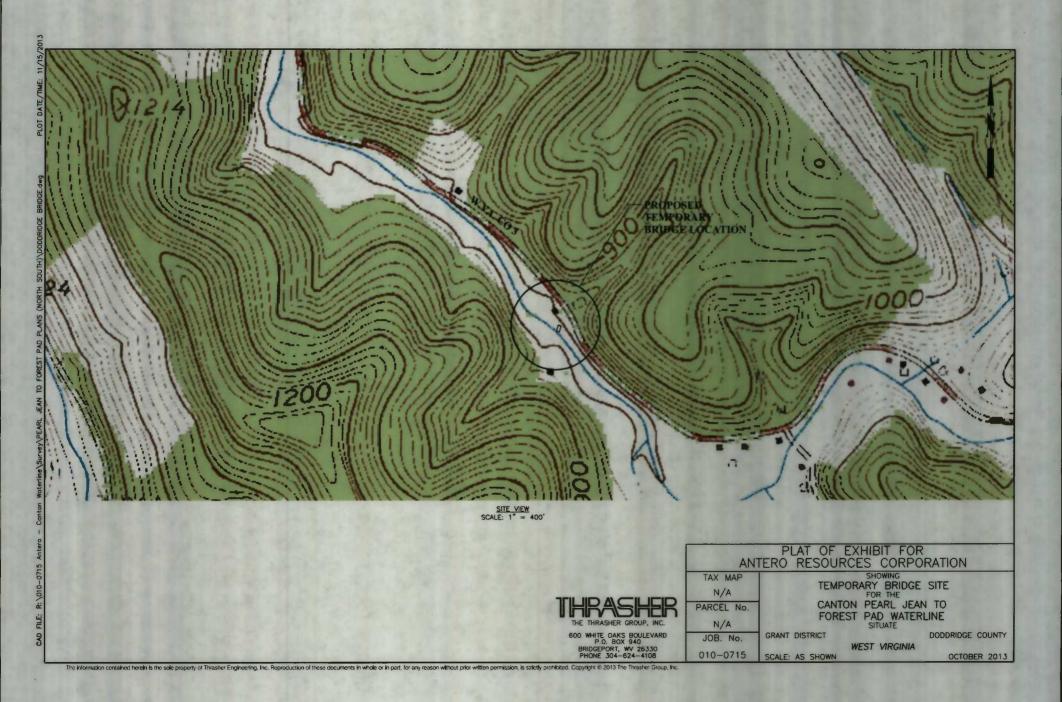


## THRASHER THE THRASHER GROUP, INC.

600 WHITE OAKS BOULEVARD P.O. BOX 940 BRIDGEPORT, WV 26330 PHONE 304-624-4108

PLAT OF EXHIBIT FOR										
ANTERO RESOURCES CORPORATION										
TAX MAP										
/ .	TE	MPORARY BRID	GE							
N/A		FOR THE								
PARCEL No.	CANT	on Pearl Jean	N TO							
	l FC	REST WATERLIN	IE							
N/A		SITUATE	_							
JOB. No.	GRANT DISTRICT		DODDRIDGE COUNTY							
005. 110.		WEST VIRGINIA								
010-0715	SCALE, AS SHOWN		OCTOBER 2013							

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## STREAM CROSSING FLOODPLAIN ANALYSIS

## ANTERO – FLINT RUN TEMPORARY STREAM CROSSING DODDRIDGE COUNTY, WV

**NOVEMBER 2013** 

**PREPARED FOR:** 

ANTERO RESOURCES CORPORATION

## ANTERO – FLINT RUN TEMPORARY STREAM CROSSING DODDRIDGE COUNTY, WV

#### **TABLE OF CONTENTS**

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1.0	PROJECT DESCRIPTION	1
2.0	HYDROLOGIC ANALYSIS	1
3.0	CONCLUSIONS	1

#### **APPENDICES**

- 1 HEC-RAS SUMMARY TABLE
- 2 HEC-RAS CROSS SECTIONS
- 3 SITE PLAN

## ANTERO – FLINT RUN TEMPORARY STREAM CROSSING DODDRIDGE COUNTY, WEST VIRGINIA

#### 1.0 PROJECT DESCRIPTION

The Thrasher Group has been contracted by Antero to perform a hydrologic study on a temporary stream crossing that was previously installed to acquire access to a pipeline and make repairs to a slip site. The crossing is located off of Big Flint Road C.R. 3 approximately 1 mile south of C.R. 5 intersection.

#### 2.0 HYDROLOGIC ANAYLSIS

To determine how the temporary crossing has affected the existing flood plain, a hydrology and hydraulic analysis was performed. The site is located in the FEMA Flood Zone 'A.' and therefore, no detailed flood study or base flood elevation has been established. The hydrologic data and flow was gathered by using USGS Quad Maps and the USGS Regional Regression Equations for Rural Areas. The drainage area is 10.19 square miles and produced a flow of 2,868 cfs for a 100 year storm event. Survey of the surrounding area and crossing was performed. Cross sections were created from the surface and inserted into HEC-RAS. A hydraulic model was run on Flint Run to produce an existing base flood elevation.

The proposed crossing was then added to the model to provide a comparison between the existing and proposed stream conditions.

#### 3.0 CONCLUSION

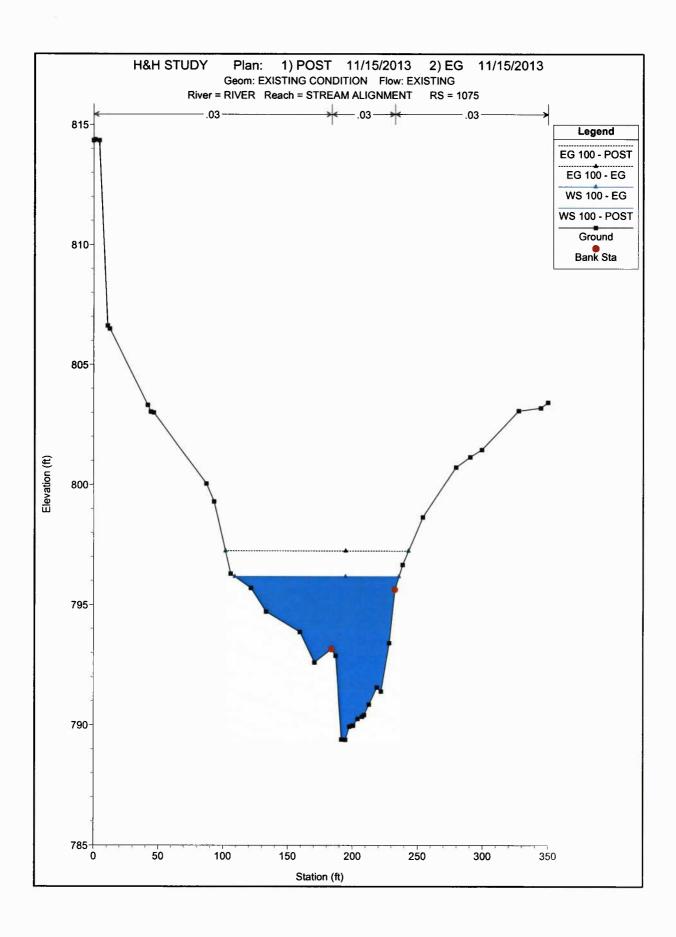
The existing flood plain elevation immediately upstream of the temporary bridge was found to be 797.68'. Looking at the analysis 100 feet upstream of the crossing the proposed backwater elevation increased by 0.75'. According to the aerial mapping of the area this increase in the flood plain elevation still does not appear to impact any structures in the area. The WVDOH Drainage manual and FEMA states that with no known base flood elevation, the temporary crossing is not to cause more than one foot of cumulative increase to the approximate flood elevation (this was derived through HEC-RAS). Our analysis falls within these requirements; however no increase in backwater is always a goal. Appendix 1 includes a summary table of the 100 year flood plain elevations for both existing and proposed stream conditions and the elevation differences at each analyzed section.

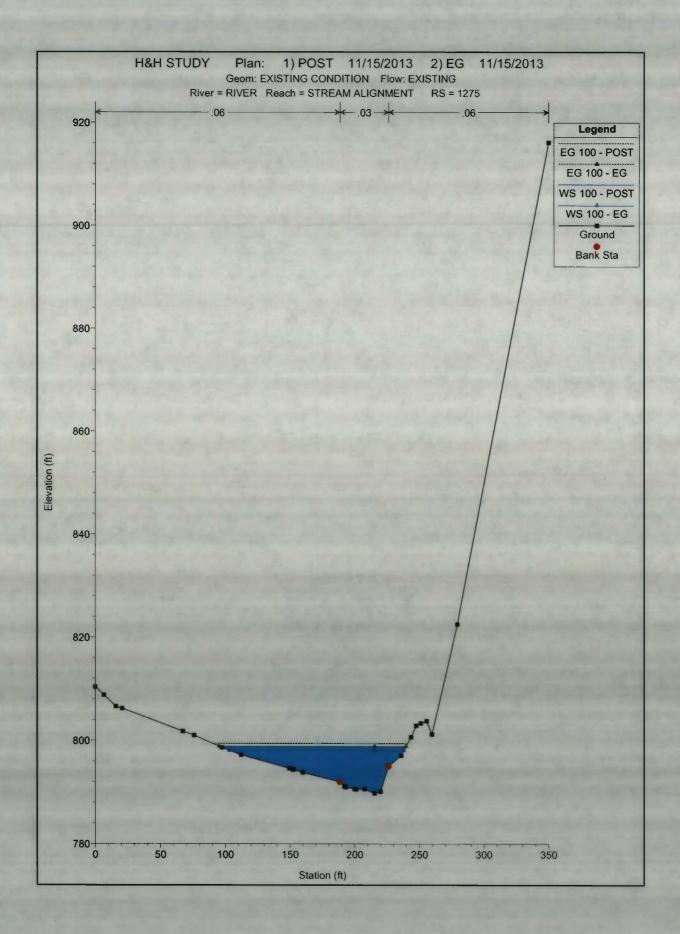
## APPENDIX 1 HEC-RAS SUMMARY TABLES

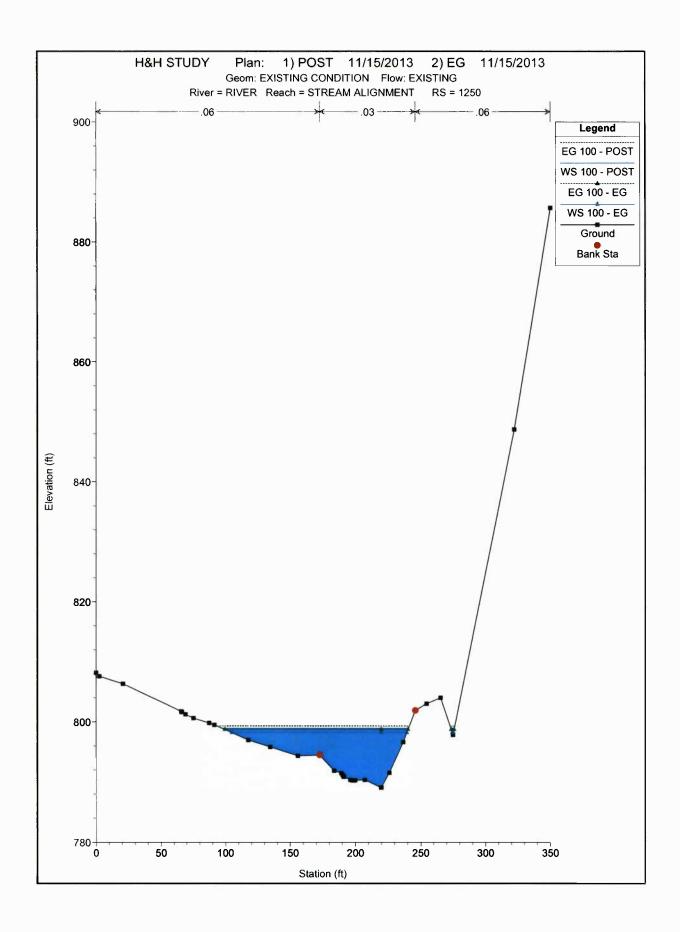
HEC-RAS River: RIVER Reach: STREAM ALIGNMENT Profile: 100

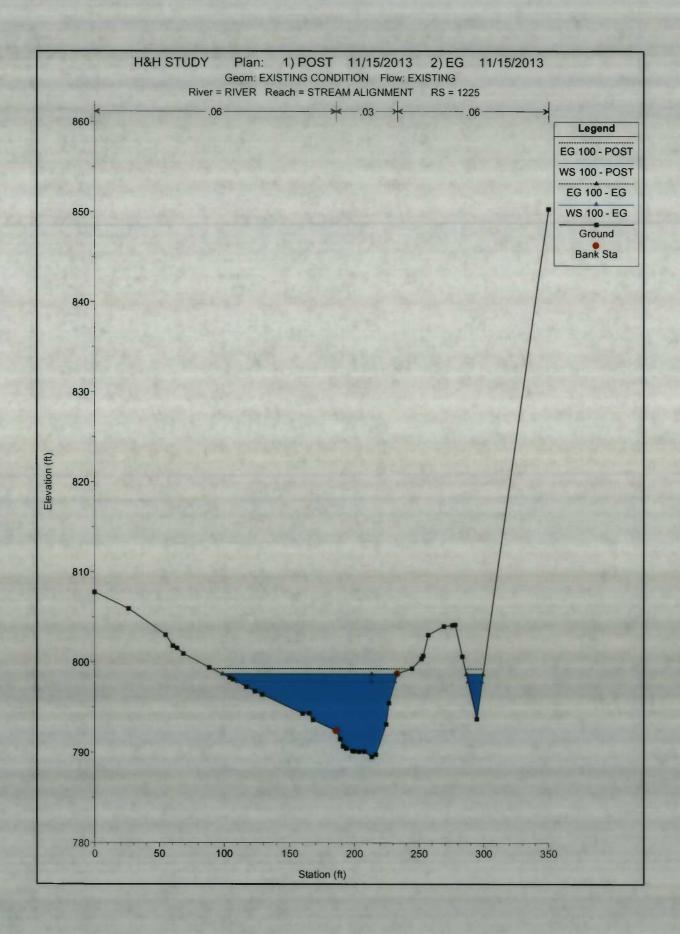
Reach	River Sta	Profile	Plan	、Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				- (cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
STREAM ALIGNMENT	1275	100	POST	2867.56	789.78	798.82		799.39	0.001344	7.00	669.11	144.05	0.44
STREAM ALIGNMENT	1275	100	EG	2867.56	789.78	798.07		798.85	0.002027	8.05	564.23	134.84	0.53
		2.04	,										
STREAM ALIGNMENT	1250	100	POST	2867.56	789.07	798.92		799.31	0.000888	5.29	699.73	145.87	0.35
STREAM ALIGNMENT	1250	100	EG	2867.56	789.07	798.22		798.73	0.001274	6.00	601.31	135.50	0.41
			1										
STREAM ALIGNMENT	1225	100	POST	2867.56	789.51	798.69		799.26	0.001488	6.73	643.71	147.69	0.45
STREAM ALIGNMENT	1225	100	EG	2867.56	789.51	797.83		798.65	0.002323	7.98	522.31	131.99	0.55
STREAM ALIGNMENT	1200	100	POST	2867.56	789.94	798.66		799.22	0.001564	6.94	706.68	191.81	0.46
STREAM ALIGNMENT	1200	100	EG	2867.56	789.94	797.60		798.57	0.003173	8.85	518.97	161.02	0.64
			. p. *										
STREAM ALIGNMENT	1175	100	POST	2867.56	790.18	798.72	796.40	799.15	0.001121	5.87	694.85	181.28	0.39
STREAM ALIGNMENT	1175	100	EG	2867.56	790.18	797.68		798.44	0.002295	7.54	518.02	164.48	0.55
aran a		1.0	1.5										
STREAM ALIGNMENT	1152.99	*	71.0	Bridge									
A .		1											
STREAM ALIGNMENT	1125	100	POST	2887.58	790.85	796.58	796.58	798.17	0.006978	10.39	299.47	99.78	0.90
STREAM ALIGNMENT	1125	100	EG	2887.56	790.85	796.58	796.58	798.17	0.006978	10.39	299.47	99.78	0.90
STREAM ALIGNMENT	1100	100	POST	2887.56	790.41	795.94	795.94	797.55	0.008249	11.38	310.03	98.69	0.90
STREAM ALIGNMENT	1100	100	EG	2887.56	790.41	795.94	795.94	797.55	0.006249	11.38	310.03	98.69	0.90
STREAM ALIGNMENT	1075	100	POST	2867.56	789.38	798.17		797.24	0.004329	9,11	379.39	126.70	0.73
STREAM ALIGNMENT	1075	100	EG	2887.58	789.38	798.17		797.24	0.004329	9.11	379.39	126.70	0.73
		7											
STREAM ALIGNMENT	1050	100	POST	2867.56	788.64	796.31		797.05	0.002799	7.74	461.91	152.89	0.59
STREAM ALIGNMENT	1050	100	EG	2867.56	788.64	796.31		797.05	0.002799	7.74	461.91	152.89	0.59
1.00		2 2	1.3					·	·				
STREAM ALIGNMENT	1025	100	POST.	2867.56	788.86	798.30	795.60	796.96	0.002708	7.25	485.79	169.78	0.58
STREAM ALIGNMENT	1025	100	EG	2867.56	788.86	798.30	795.60	796.96	0.002708	7.25	485.79	169.78	0.58
STREAM ALIGNMENT	1000	100	POST	2867.56	788.84	795.55	795.55	796.80	0.005282	9.76	383.08	143.46	0.79
STREAM ALIGNMENT	1000	100	EG	2867.56	788.84	795.55	795.55	796.80	0.005282	9.76	383.08	143,48	0.79

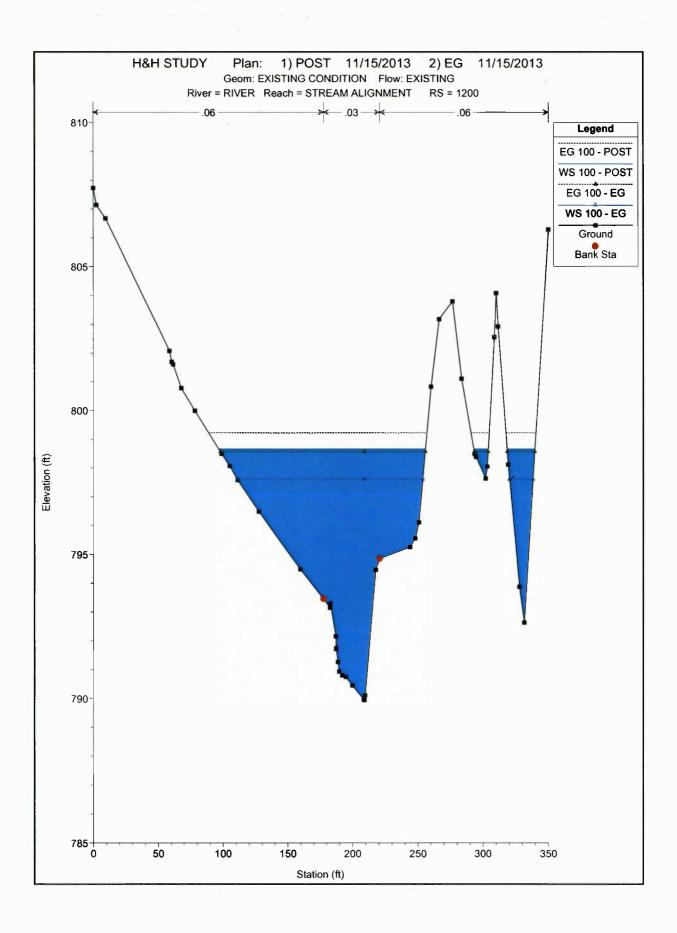
## APPENDIX 2 HEC-RAS CROSS-SECTIONS

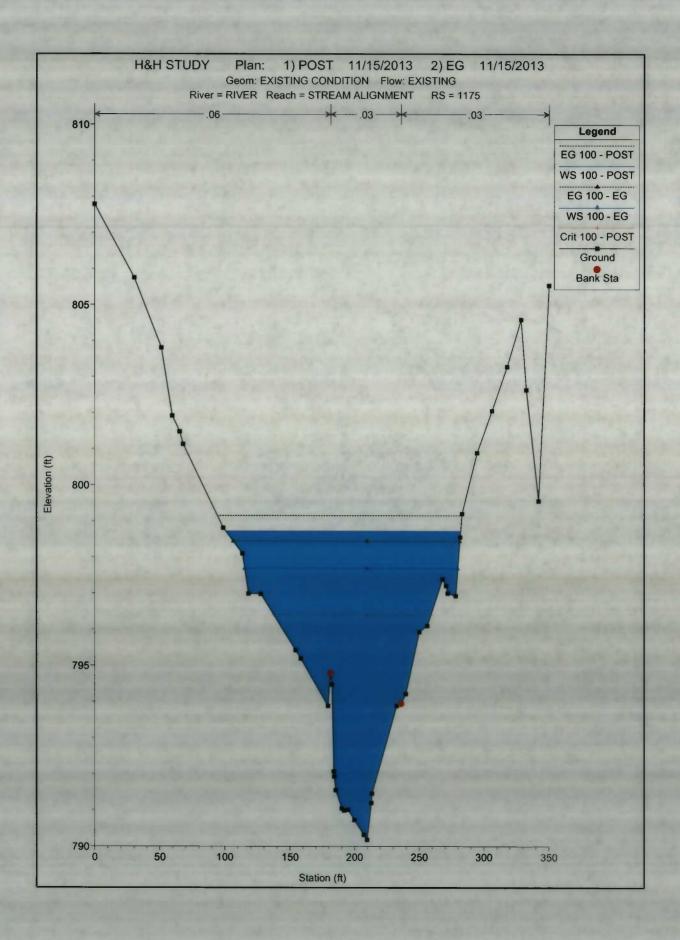


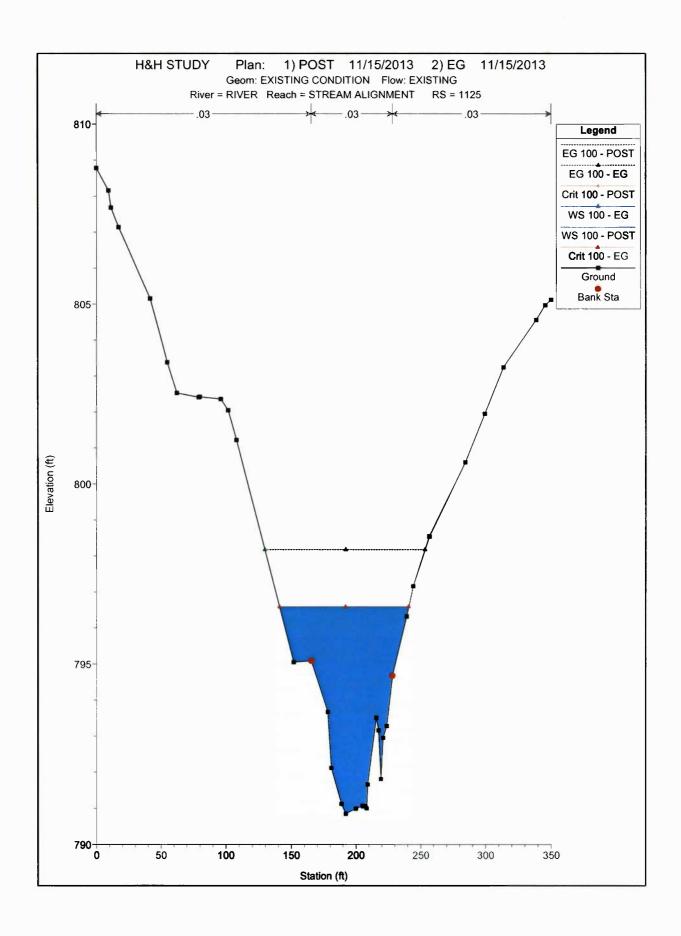


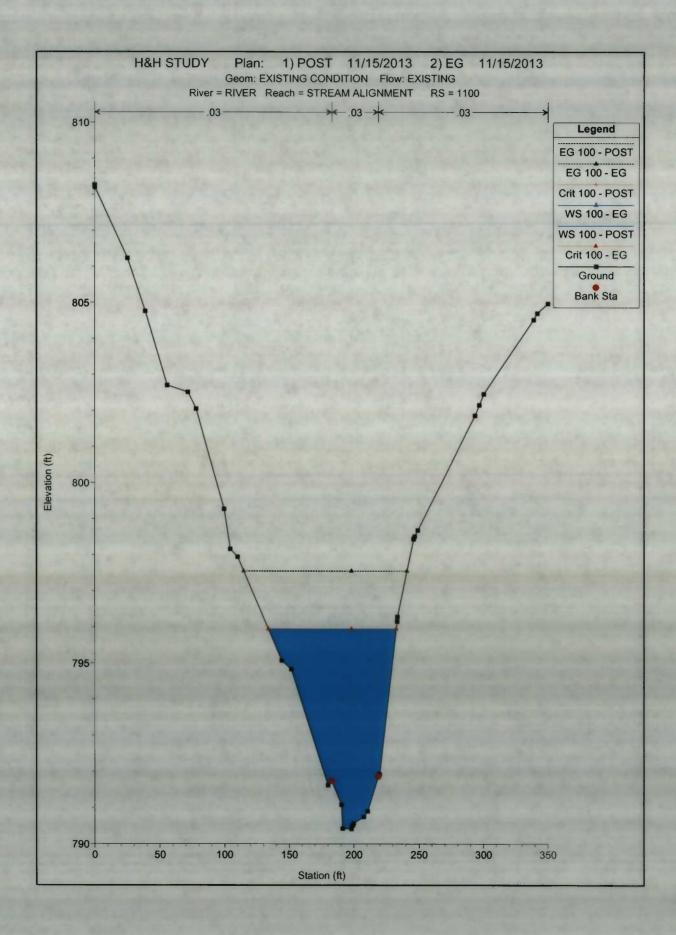


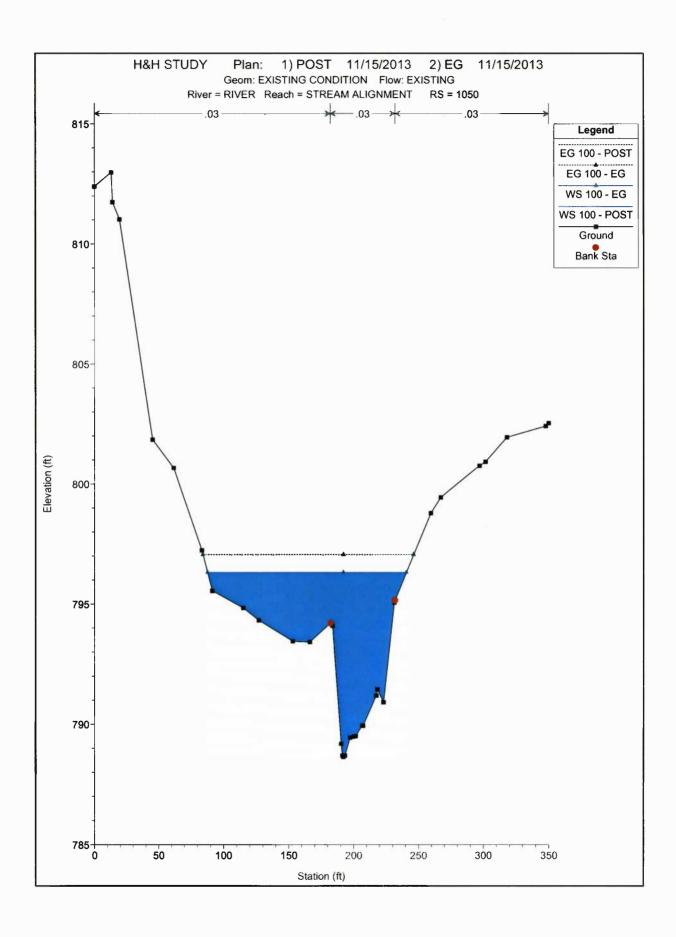


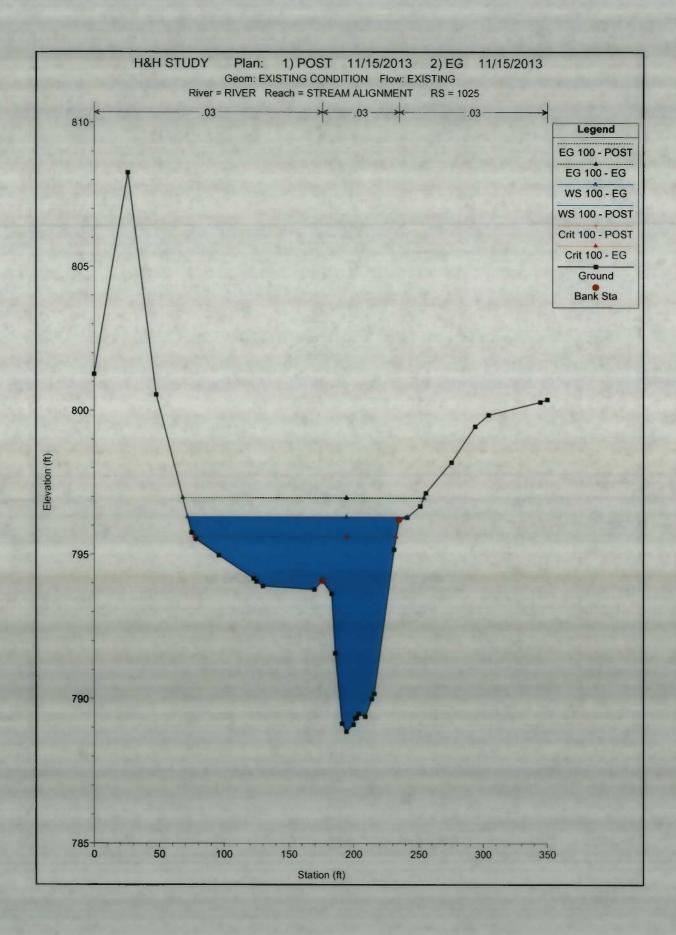


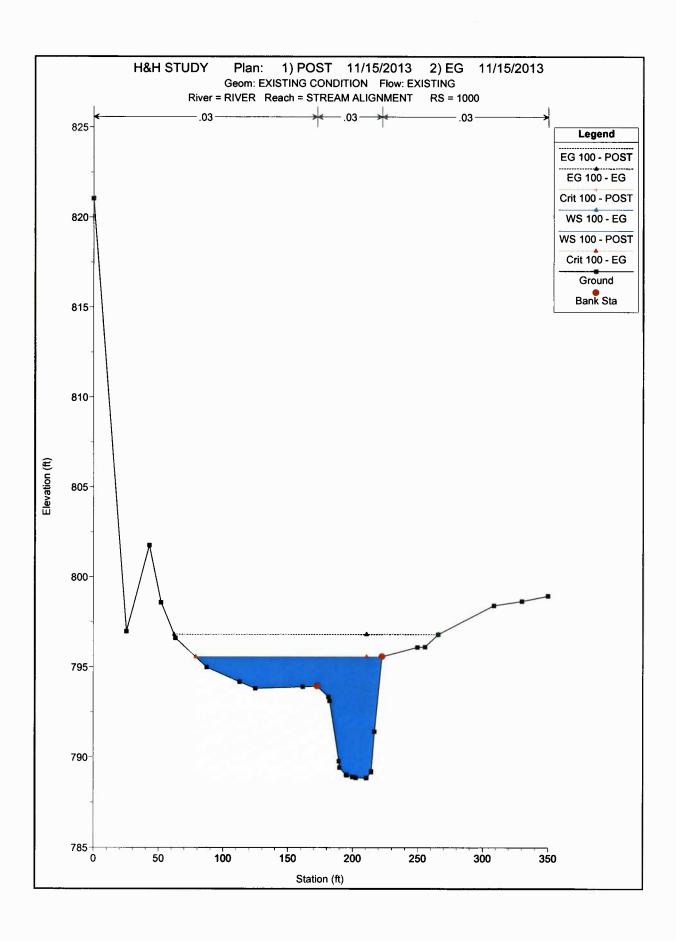


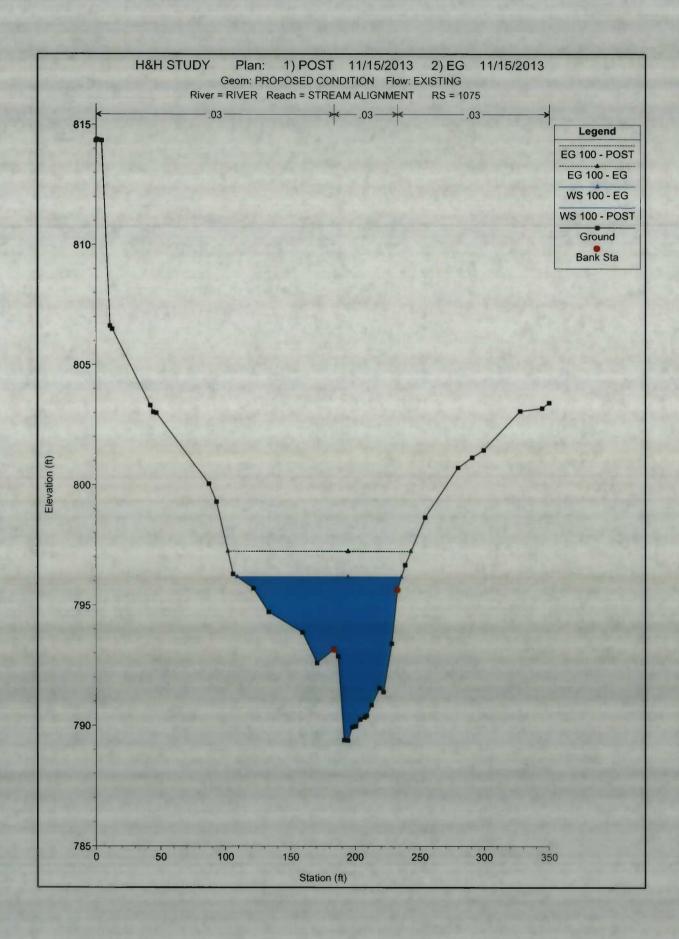


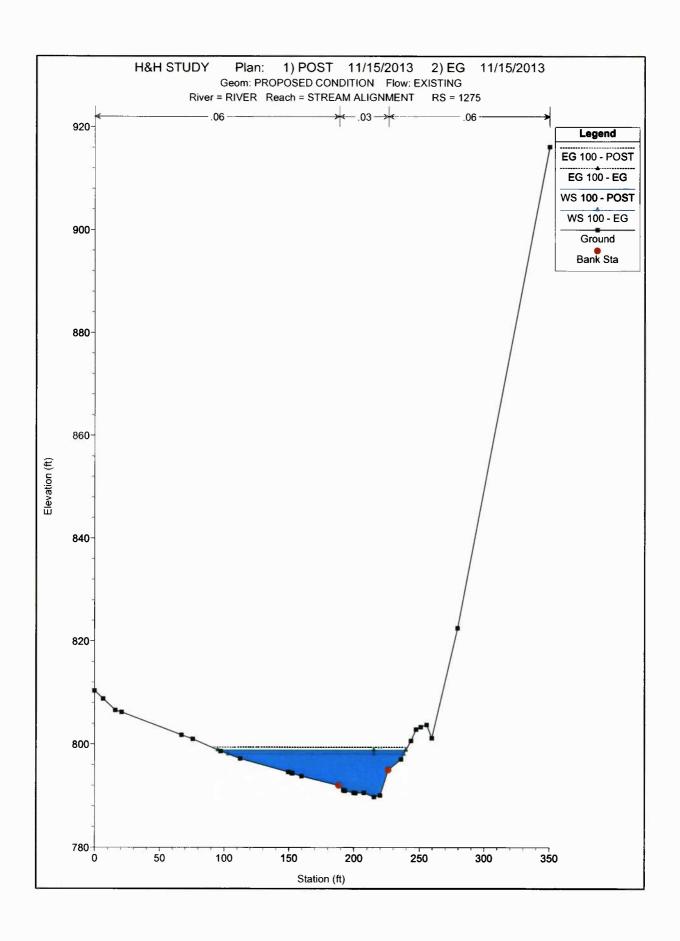


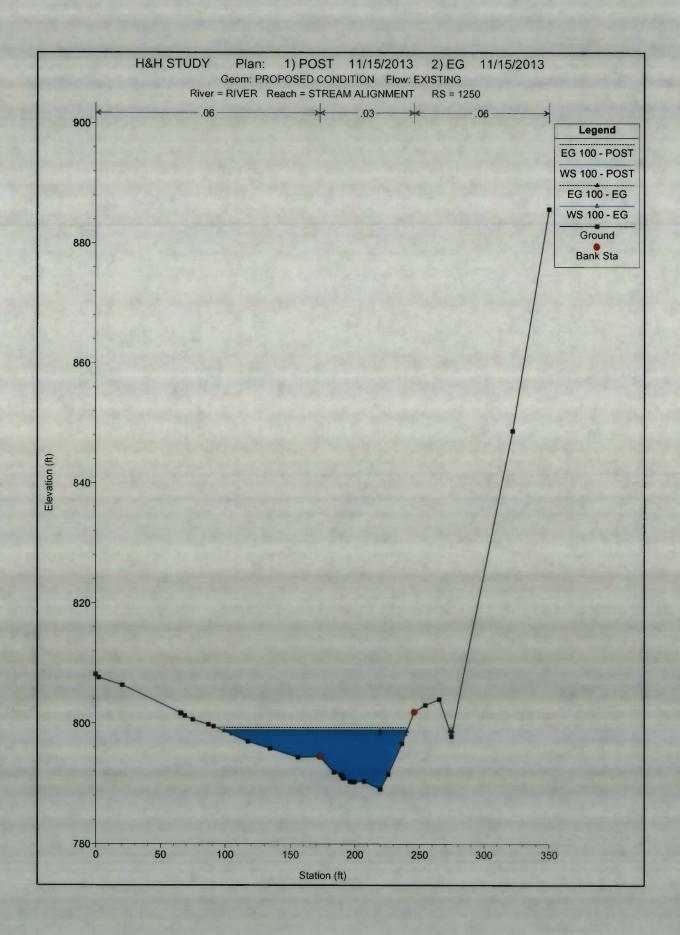


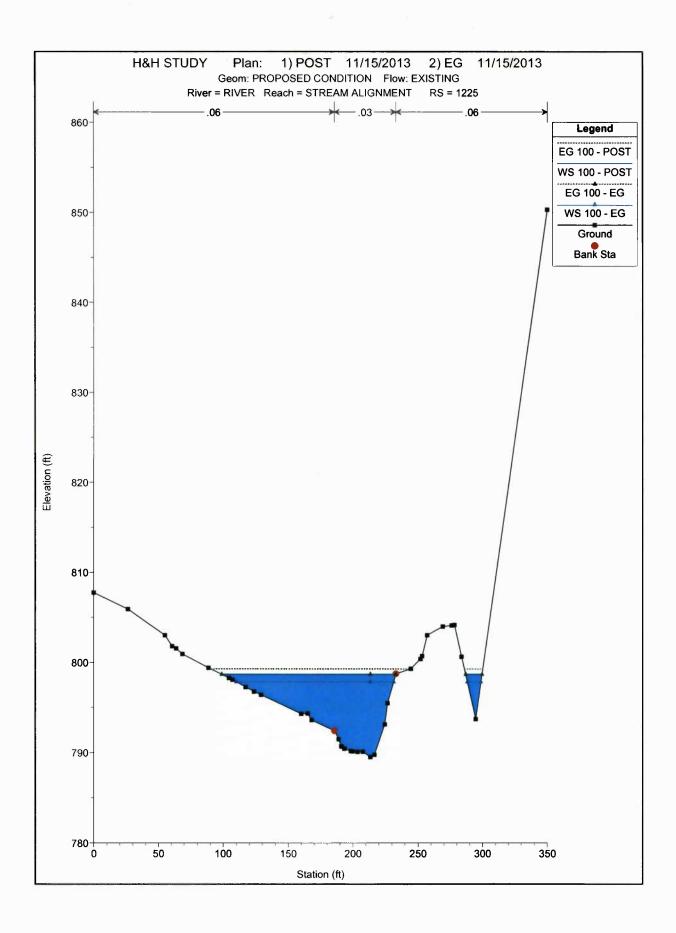


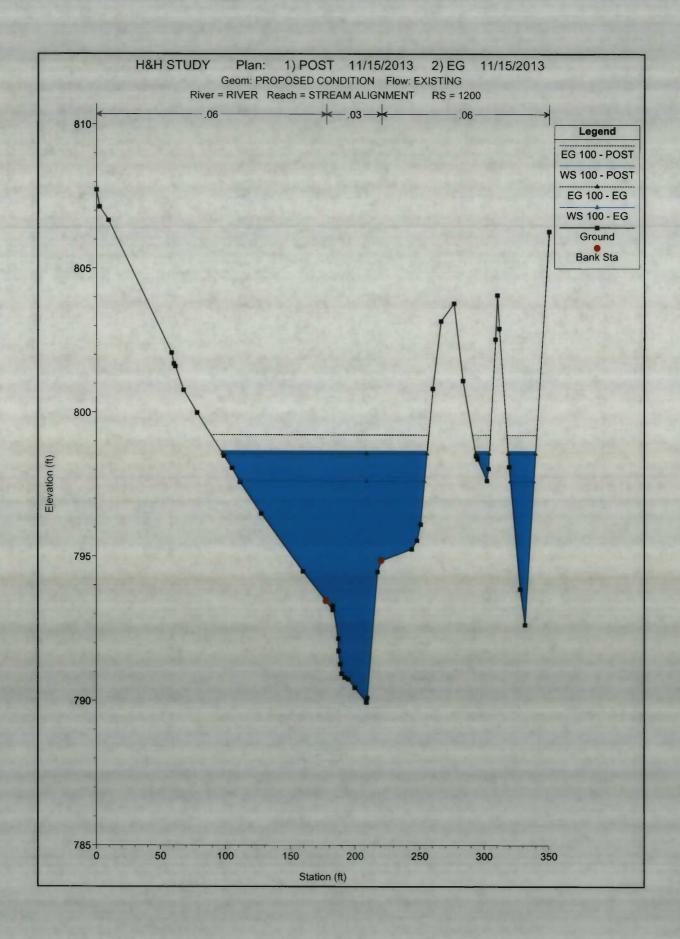


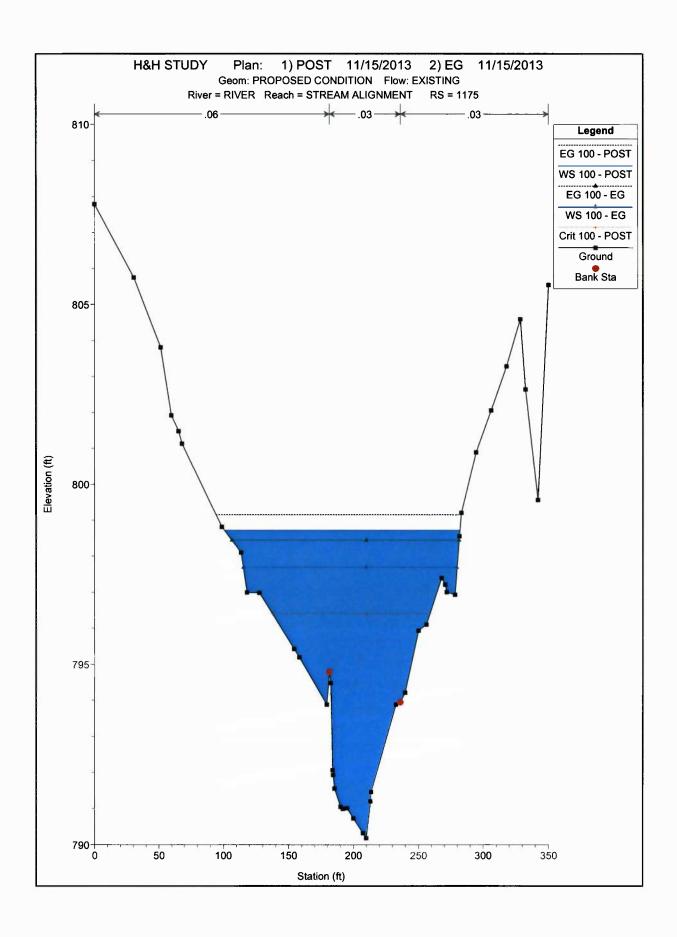


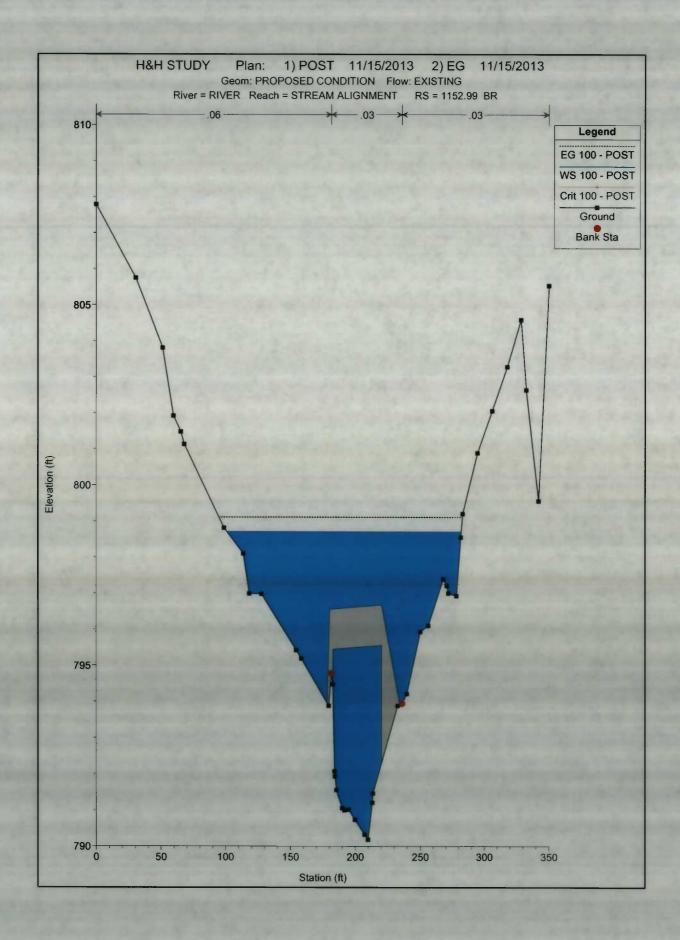


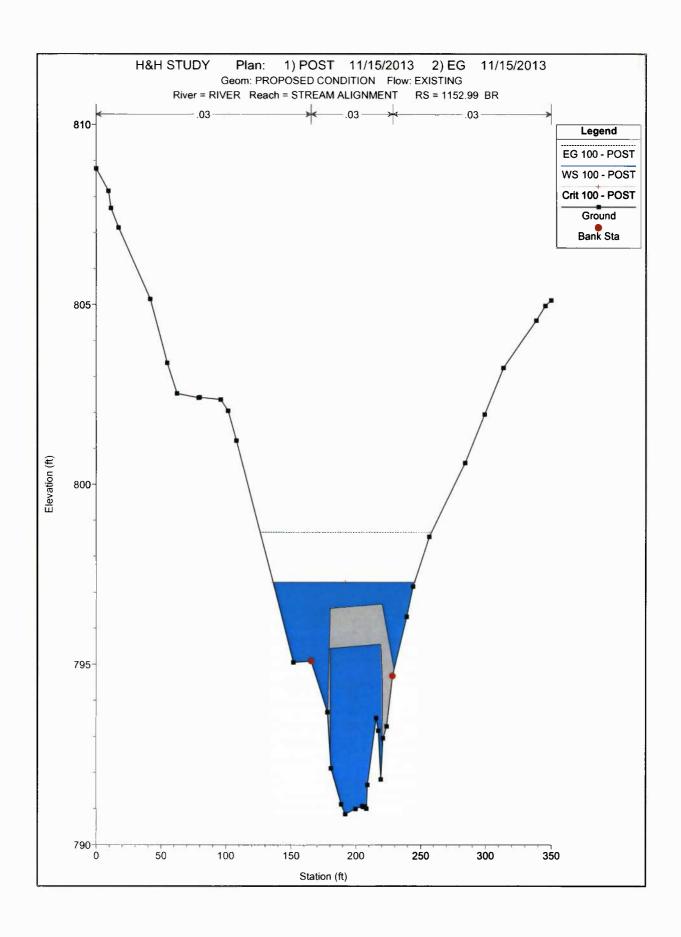


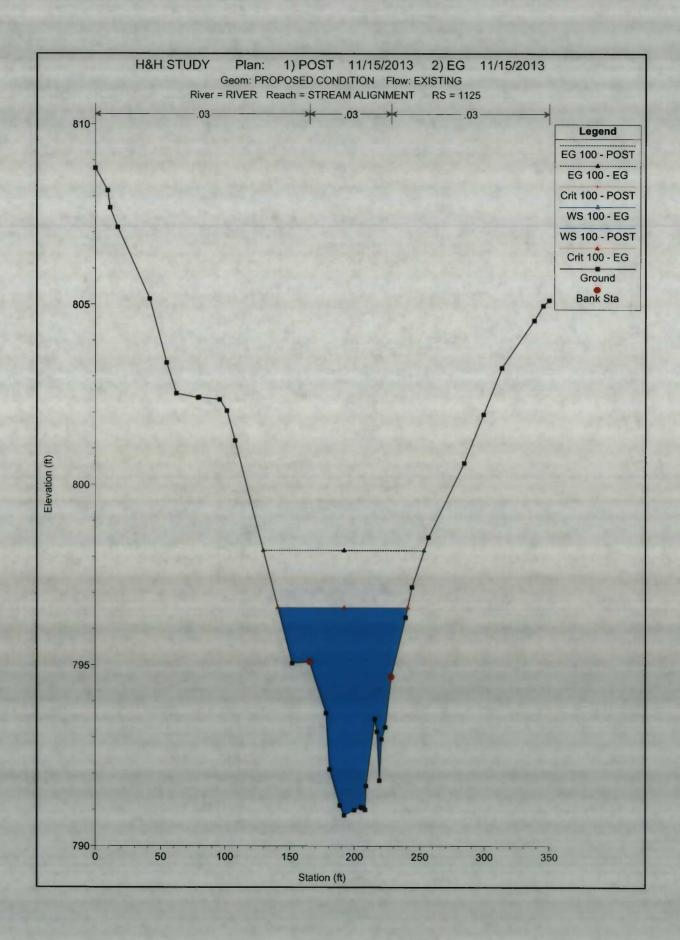


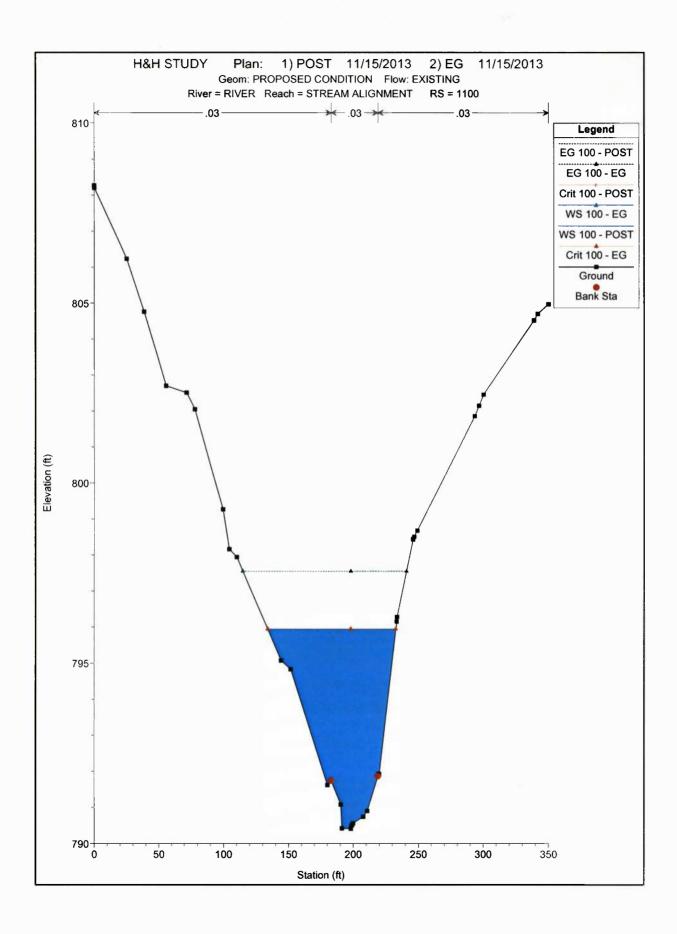


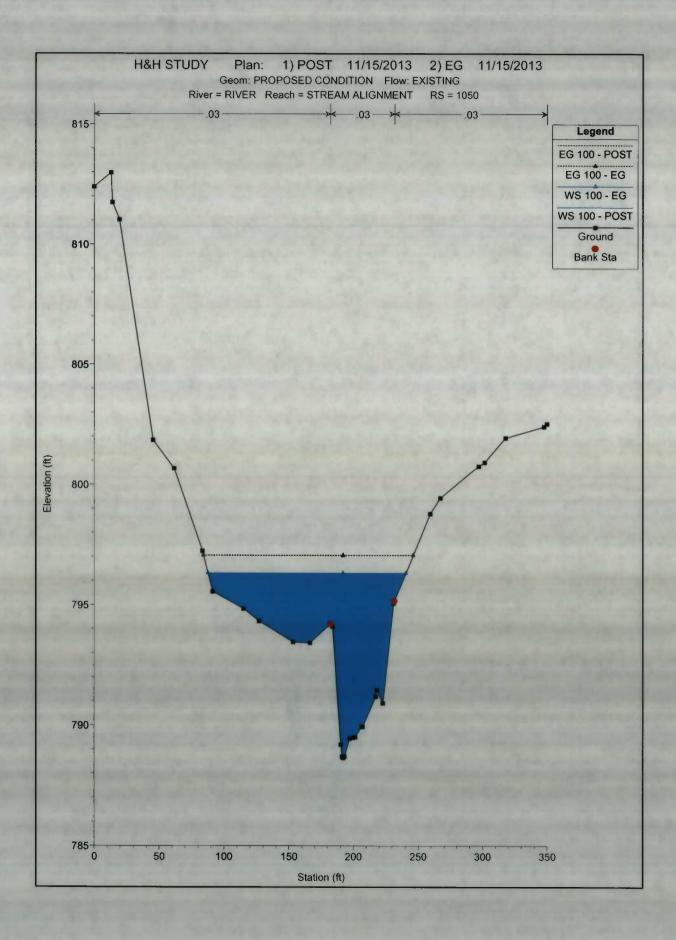


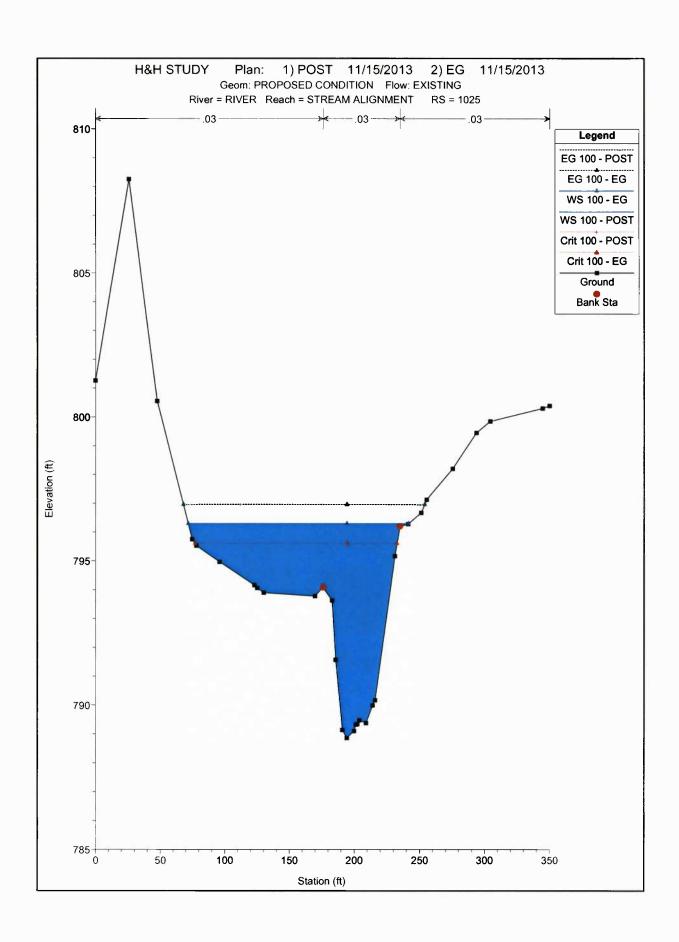


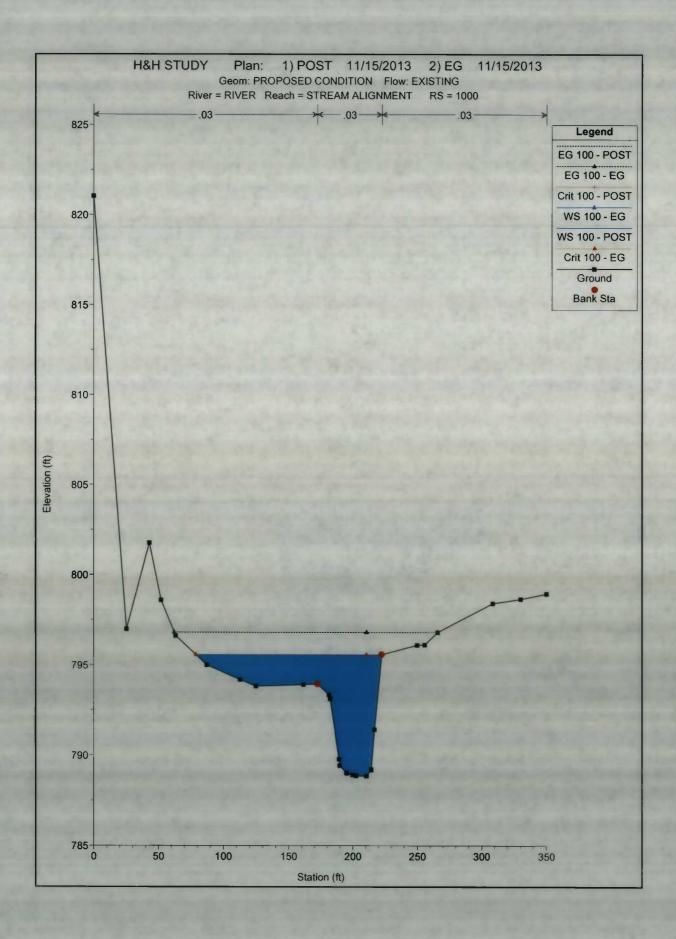












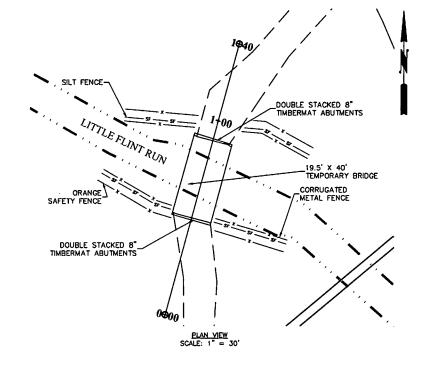
## APPENDIX 3 SITE PLANS

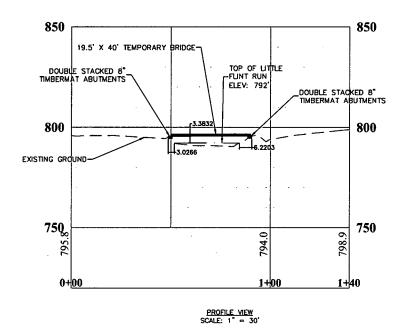
LEGEND/ABBREVIATIONS

- = ORANGE SAFETY FENCE

---- = SILT FENCE

- · · · · · · = EDGE OF STREAM
- · · · · · = EXISTING GROUND
- · · · · · · = PIPELINE PROFILE



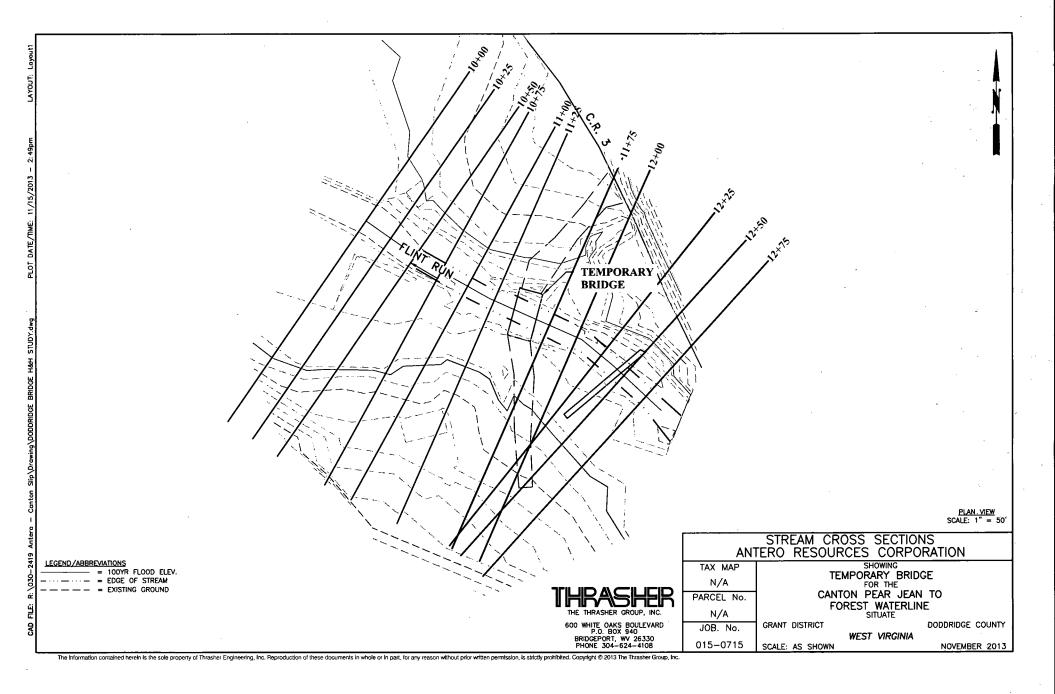


### THRASHER GROUP, INC.

600 WHITE OAKS BOULEVARD P.O. BOX 940 BRIDGEPORT, WV 26330 PHONE 304-624-4108

PLAT OF EXHIBIT FOR ANTERO RESOURCES CORPO								
TAX N	MAP				OWING			
N/A	N/A		TEMPORARY BRIDGE					
N//			FOR THE					
PARCEL	No.	CANTON PEARL JEAN TO						
٠.,		FOREST WATERLINE						
N/A	Α			SI	TUATE			
JOB.	No.	GRANT	DISTRICT			DODDRIDGE	COUNTY	
1				WEST	VIRGINIA			
010-0	715	SCALE:	AS SHOWN			OCTOB	ER 2013	

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Antero Resources 1625 17th Street Denver, Colorado 80202 Office 303.357.7310 Fax 303.357.7315

December 4, 2013

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

Mr. Wellings:

Please find enclosed a revised check to correspond with the Doddridge County Floodplain permit submitted for the Canton Temporary Bridge. We were contacted by Katy mid-November and informed of the revised amount of \$500.00. The self-addressed and stamped envelope can be used to send back the previously submitted \$1,000.00 check.

If you have any questions please feel free to contact me at (303) 357-6820.

Sincerely,

Shauna DeMattee

Permit Representative

Antero Resources Corporation

icen DeMattee

**Enclosures** 

2013 DEC -5 PH 4: 38
BETH A. ROGERS
COUNTY CLERK

# THRASHER

November 15, 2013

Mr. Dan Wellings Doddridge County Commission 118 East Court Street West Union, WV 26456

RE: Doddridge County Location Improvement Permit
Antero Resources Corporation
Pearl Jean to Forest Water Line Temporary Bridge
Doddridge County, West Virginia

Doaariage County, west virginia
Thrasher Group Project #101-010-0715

BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WY

2013 NOV 18 PM 4: 05

Mr. Wellings:

The Thrasher Group, Inc. (Thrasher) has been retained by Antero Resources Corporation (Antero) to provide professional environmental and engineering services. These services include the preparation of construction documents and environmental permitting. The proposed Pearl Jean to Forest Temporary Bridge Project is located in Doddridge County, West Virginia; at approximate coordinates 39.342027°N and 80.694001°W. The project will involve the installation of a 40 by 19.5 foot temporary bridge to in an existing access road to cross Flint Run, in order to repair a slip in the existing pipeline right-of-way. Note that due to the severity of the slip, the bridge has been installed in order to stabilize the slip and prevent impact to any aquatic resources downgrade.

Impact to the stream shall be avoided by placing the bridge on double-stacked timber mat stabilizers (abutments) approximately 3.38 feet above, and approximately 6.22 and 3.03 feet outside of the stream's Ordinary High Water Mark (OHWM). In addition, the stream will be bordered with three phases of fencing (corrugated metal, silt and orange safety fencing). The installation and location of the temporary bridge will not require in-stream activity.

The proposed temporary bridge is located within the 100 year floodplain. According to the hydrologic analysis study; 100 feet upstream of the crossing the proposed backwater elevation increased by 0.75'; under the one foot cumulative floodplain elevation increase threshold per the WVDOH Drainage Manual and FEMA. In addition, no adjacent structures are anticipated to be impacted by the temporary bridge.

Please see attached mapping, project exhibit and HEC-RAS floodplain study detailing the project. Also, included is a Doddridge County Floodplain permit application and permit fee.

If any further documentation is required for this project, or if any questions may arise please feel free to contact me at your convenience at (304) 624-4108 or <a href="mailto:ddrennen@thrashereng.com">ddrennen@thrashereng.com</a>.

Sincerely,

THE THRASHER GROUP, INC.

\_\_\_\_

DON L. DRENNEN Environmental Scientist

Enclosures

LEGAL ADVERTISEMENT
Doddridge County
Floodplain Permit Application
Please take notice that on the 21st day of November,
2013 ANTERO RESOURCES CORPORATION - PEARL
JAM TO FOREST WATER LINE TEMPORARY
BRIDGE #13-095 filed an application for a Floodplain
Permit to develop land located at or about: SURFACE
OWNERS: RONALD YERKEY, GRANT DISTRICT,
DEED BOOK: 275/64, TAX MAP: 9/9
The Application is on file with the Clerk of the County
Court and may be inspected or copied during regular
business hours. Any interested persons who desire to
comment shall present the same in writing by December
11, 2013.

11, 2013.

Delivered to the: Clerk of the County Court 118 E. Court Street, West Union, WV 26456 Beth A. Rogers, Doddridge County Clerk
Dan Wellings, Doddridge County Flood Plain Manager 11-26-2xb



### 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
Floodplain Permit Application # 13-095
was published in said paper for
successive weeks beginning with the issue
of Movember 26 ta 2013 and
ending with the issue of
2013 and
that said notice contains
WORD SPACE at
amounts to the sum of S 2. 1 7. 4
FOR FIRST PUBLICATION, SECOND PUBLICATION IS 75% OF THE FIRST PUBLICATION
and each publication thereafter
31.74total
Duginia Hicholson
SWORN TO AND SUBSCRIBED
BEFORE ME THIS THE J DAY
OF December 2013
IOTARY PUBLIC
Jama J. Oldamo