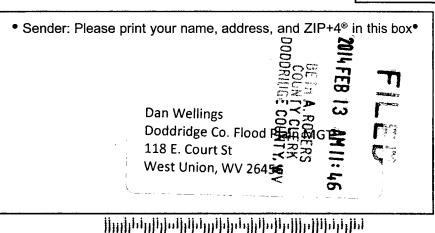
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SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
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UNITED STATES POSTAL SERVICE



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United States Postal Service



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

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Anthony J. Mancusco 365 Dye Dr. Bridgeport, WV 26330	
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UNITED STATES POSTAL SERVICE



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

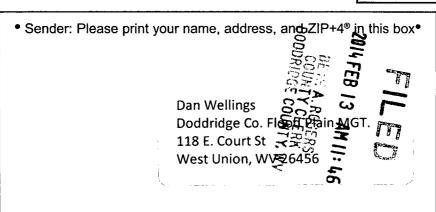
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Terry & JoAnn Ross Box 141 West Union, WV 26456			
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PS Form 3811, July 2013 Domestic Ret	urn Receipt		

United States Postal Service



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



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West Union, WV 26456	3. Service Type Certified Mail® □ Priority Mail Express™ □ Registered □ Return Receipt for Merchandise □ Insured Mail □ Collect on Delivery
	4. Restricted Delivery? (Extra Fee)
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PS Form 3811, July 2013 Domestic Re	turn Receipt

UNITED STATES POSTAL SERVICE



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

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

SENDER: COMPLETE THIS SECTION	COMPLETE 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. 	A. Signature X Agent Addressee B. Received by (Printed Name) C. Date of Delivery Anny Cope C. Date of Delivery Anny Cope C. Date of Delivery Cope C. Date of Delivery
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WV Railroad Maint. Authority P.O. Box 470 == Moorefield, WV 26836	120 Water Plant Dr. Moore field WU 26836
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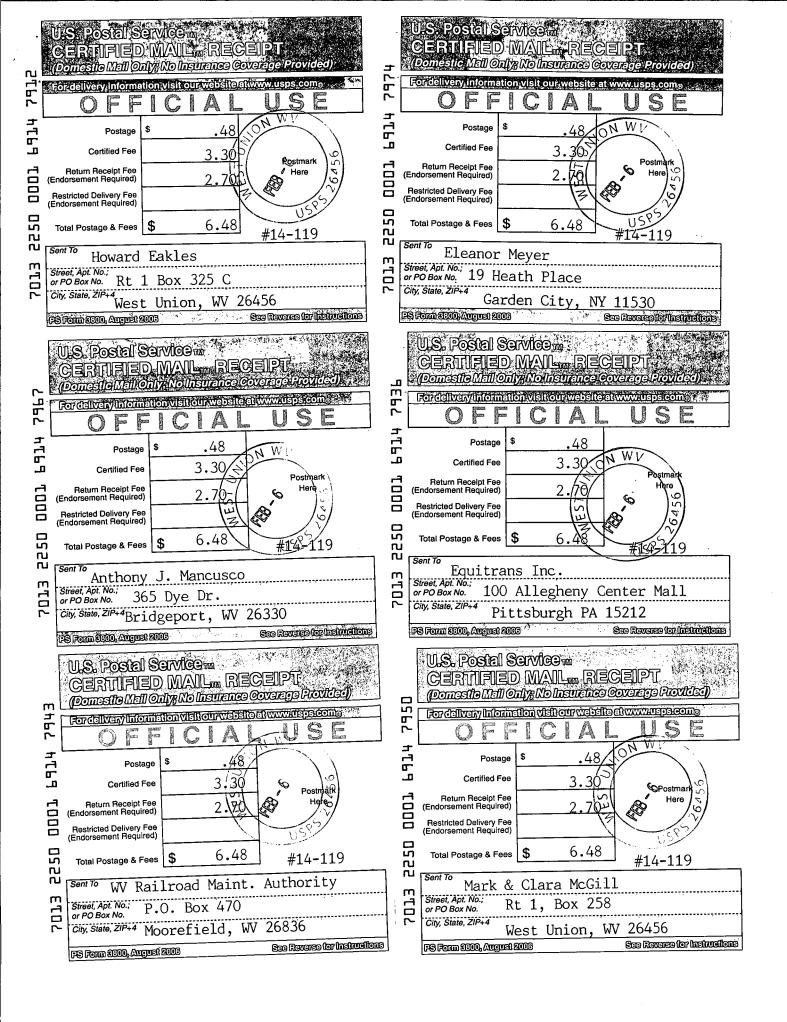
United States Postal Service



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

Sender: Please print your name, address, and ZIP+4® in this box• Dan Wellings Doddridge Co. Flood Plai 118 E. Court St West Union, WV 26456

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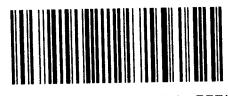




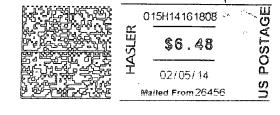
CERTIFIED MAIL RECEIPT (Domestic Mail Only; No Insurance Coverage Provided) Ŋ 790 ⅎ 77 Ī۸ Postage 48 ュ Certified Fee 3.30 1000 Postmark Return Receipt Fee (Endorsement Required) 2.70 Here Restricted Delivery Fee (Endorsement Required) 50 6.48 Total Postage & Fees \$ #14-119 'n Ш Sent To William P Seahorn III & Ruth Rebecca Johnson.... m Box 1483 or PO Box No. City, State, ZIP+4 West Union, wV 26456 PS Form 3800, August 2006

U.S. Postal Service In

Dan Wellings Doddridge Co Flood Plain MGT Room 102 118 East Court St. West Union, WV 26456

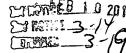


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Eliter Meyer 19 th Place Garch City, NY 11530			
Garcia Grey, NI 11550	3. Service Type XXI Certified Mail		
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Legal Advertisement:

Doddridge County

Floodplain Permit Application

Please take notice that on the 4th day of February, 2014

EQT GATHERING, LLC

MOSA - SO15 GATHERING LINE # 14-119

filed an

application for a Floodplain Permit to develop land located at or about: SURFACE OWNERS: ELEANOR MEYER & WV RAILROAD MAINTAIN AUTHORITY, WEST UNION & CENTRAL DISTRICT, W/B 10/526, D/B 216/166 T/M 8-14-6, & 1-7-94

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 **FEBRUARY 24, 2014.**

Delivered to the:

Clerk of the County Court

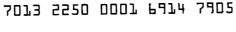
118 E. Court Street, West Union, WV 26456.

Beth A Rogers, Doddridge County Clerk

Dan Wellings, Doddridge County Flood Plain Manager

Dan Wellings Doddridge Co Flood Plain MGT Room 102 118 East Court St. West Union, WV 26456







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west officity wv 20436	3. Service Type XXCertified Mail® □ Priority Mail Express™ □ Registered □ Return Receipt for Merchandise □ Insured Mail □ Collect on Delivery		
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Doddridge County

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Delivered to the:

Clerk of the County Court

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

Beth A Rogers, Doddridge County Clerk

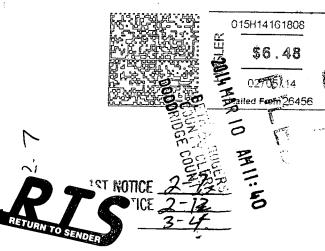
Dan Wellings, Doddridge County Flood Plain Manager

Dan Wellings Doddridge Co Flood Plain MGT Room 102 118 East Court St. West Union, WV 26456



7013 2250 0001 6914 7912





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SENDER: COMPLETE PUS SECTION	COMPLETE 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	A. Signature X
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.	B. Received by (Printed Name) C. Date of Delivery
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West Union, WV 26456	
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2. Article Number (Transfer from service label) 7013 2250	0001 6914 7912
PS Form 3811, July 2013 Domestic Re	eturn Receipt

Legal Advertisement:

Doddridge County

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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

PERMIT NO. 14-119

DODDRIDGE COUNTY FLOODPLAIN DEVELOPMENT PERMIT

PURPOSE FOR PERMIT: Gas Line	·
ISSUED TO EQT (athering, LLC.	
ADDRESS: 115 Professional Place, Bridge por	+
PROJECT ADDRESS: Surviside Road.	,
ISSUED BY: fold some	,
DATE: 3-6-14	
CONSTRUCTION MUST START WITHIN 180 DAYS FROM ISSUED DATE. PERMIT EXPIRES IN 12 MONT ISSUED DATE. IF EXTENTION IS NEEDED A REQUEST MUST BE MADE IN WRITING STATING A REASO EXTENTION.	THS FROM ON FOR THE

THIS PERMIT MUST BE POSTED ON THE PREMISES IN A CONSPICUOUS PLACE SO AS TO BE CLEARLY VISIBLE FROM THE STREET.

Doddridge County, West Virginia

DATE: 2014/03/05 **RECEIPT NO:** 1577 FROM: POTESTA & ASSOCIATES INC AMOUNT: \$ 2,597.78 TWO THOUSAND FIVE HUNDRED NINETY SEVEN DOLLARS AND 78 CENTS FOR: #14-119 EQT MOSA-S015 GATHERING LINE 020-318 **TOTAL**: \$2,597.78 00000012158 FP-BUILDING PERMITS

MICHAEL HEADLEY

MEC

SHERIFF &TREASURER

CLERK

Customer Copy

Doddridge County, West Virginia

RECEIPT NO:

1578

DATE: 2014/03/05

FROM: POTESTA & ASSOCIATES INC AMOUNT: \$

454.44

FOUR HUNDRED FIFTY FOUR DOLLARS AND 44 CENTS

FOR: #14-119 EQT MOSA-S015 GATHERING LINE

00000012232 FP-BUILDING PERMITS

020-318

TOTAL:

\$454.44

MICHAEL HEADLEY

SHERIFF &TREASURER

MEC

CLERK

Customer Copy



TRANSMITTAL MEMO

7012 MacCorkle Avenue, SE, Charleston, WV 25304 • Phone: (304) 342-1400 • Fax: (304) 343-9031

To:	Dodo	Iridge County Floodplain Coord	linator	Date:	February 25, 2014
	Dodd	lridge County Commission		Project No.:	0101-13-0456-001
	118 I	East Court Street			
	West	Union, West Virginia 26456			
Sent	Via:	X Mail	Federal Expre	ss Unit	ed Parcel Service
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Legal Advertisement:

Doddridge County

Floodplain Permit Application

Please take notice that on the 4th day of February, 2014

EQT GATHERING, LLC

MOSA - SO15 GATHERING LINE # 14-119

filed an

application for a Floodplain Permit to develop land located at or about: SURFACE OWNERS: ELEANOR MEYER & WV RAILROAD MAINTAIN AUTHORITY, WEST UNION & CENTRAL DISTRICT, W/B 10/526, D/B 216/166 T/M 8-14-6, & 1-7-94

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 **FEBRUARY 24, 2014.**

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

FEB-04-2014 TUE 08:04 PM

FOR:

DODDRIDGE CO. CLERK

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Legal Advertisement:

Doddridge County

Floodplain Permit Application

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EQT GATHERING, LLC

MOSA - 5015 GATHERING LINE # 14-119

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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



7012 MacCorkle Avenue, SE, Charleston, WV 25304 • (304)342-14400 • FAX (304)343-9031; www.potesta.com

2014 JAN 29 PM 12: 59

January 27, 2014

BETH A.ROGERS COUNTY CLERK DODDRIDGE COUNTY, WV

Mr. Dan Wellings Doddridge County Floodplain Coordinator **Doddridge County Commission** 118 East Court Street West Union, West Virginia 26456

RE:

Floodplain Permit Application

EQT Gathering, LLC

EQT MOSA SO15 Gathering Line Doddridge County, West Virginia

POTESTA Project No. 0101-13-0456-001

Dear Mr. Wellings:

Potesta & Associates, Inc. (POTESTA) is pleased to submit this cover letter with the associated Floodplain Development Permit Application for the proposed MOSA SO15 Gathering Line Project. The proposed project will consist of installing approximately 21,353 linear feet of gathering line with associated work areas and upgrade of access roads. This gathering line crosses the floodplain in three different areas as shown in the attached three West Virginia Flood Maps. Based on information presented on the site FIRM (54017C0120C, 54017C0115C), a portion of the project is located within FEMA Flood Zone A from approximate gathering line stations 92+00 to 96+10, 112+10 to 119+00, and 202+00 to 213+53, portion of work areas, and access roads as shown on the attached site plans 7, 11, and 12. The work areas for this project are typically used to layout and assemble gas line fixture and are associated with minimal disturbance. Flood Zone A is the regulatory floodplain associated with the Base Flood (1 percent annual chance flood event), commonly referred to as the 100-year floodplain and indicates that the limits of the floodplain are approximate; as such, Base Flood Elevations (BFEs) have not been previously established by FEMA. Work within the floodplain associated with this gathering line shall include the installation of a stabilized construction entrance, installation of water bars to control surface runoff, and installation of a buried well line. All work associated with the proposed MOSA SO15 Gathering Line within the limits of the floodplain will be in accordance with the following. No permanent aboveground structures are to be constructed within the floodplain. Backfill being installed over the buried pipe will be compacted back to original grade. Any stabilized construction entrances to be installed within the floodplain shall be installed by removing existing material to a depth suitable for installing the entrances so that the top of the gravel surface is at original grade elevations. Once construction is complete, the entrance will be removed and replaced with topsoil back to original grade. Any excess material associated with this activity shall be placed outside of the floodplain limits. No fill shall be placed within the floodplain limits above original elevations.

For this project, a temporary timber mat crossing will be used to transport equipment and supplies across the first Arnolds Creek Crossing. This crossing is shown on the "MOSA SO15 – Arnolds Creek Crossing #1" Figure and Drawing No. 7 (enclosed). A Hydraulic Analysis Results Report is enclosed showing the effects of this temporary crossing. The results of this report show that there may be a 0.01 feet increase in 100-year flood elevations resulting from construction of the proposed temporary crossing when comparing the existing conditions and the proposed conditions.

Included with this permit application are floodplain map, site plan sheets, Hydraulic Analysis Results Report for the temporary timber mat crossing, and miscellaneous detail sheets for this project.

If you have any questions, please feel free to contact me at (304) 342-1400 or jmsmith@potesta.com, or Megan Landfried (EQT) at (304) 848-0061.

Sincerely,

POTESTA & ASSOCIATES, INC.

Jarrett M. Smith, P.E. Senior Engineer

JMS/clr

Enclosures

c: Ms. Megan Landfried – EQT (via email)





POTESTA Engineers and Environmental Consultants

7012 MacCorkle Avenue, SE, Charleston, WV 25304 • (304) 342-1400 • FAX (304)343-9031; www.potesta.com

Need Total Hemizedian cost

breakdown

January 27, 2014

A419,555

Mr. Dan Wellings Doddridge County Floodplain Coordinator Doddridge County Commission 118 East Court Street West Union, West Virginia 26456

RE:

Floodplain Permit Application

EQT Gathering, LLC

EQT MOSA SO15 Gathering Line Doddridge County, West Virginia

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If you have any questions, please feel free to contact me at (304) 342-1400 or jmsmith@potesta.com, or Megan Landfried (EQT) at (304) 848-0061.

Sincerely,

POTESTA & ASSOCIATES, INC.

Sarrett M. Smith, P.E. Senior Engineer

JMS/clr

c:

Enclosures

Ms. Megan Landfried – EQT (via email)



#14-119 EQT-MOSA-SO15 FILED Gathering

DODDRIDGE COUNTY BETH A. ROGERS FLOODPLAIN DEVELOPMENT PERMIT APPLICATION WV

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_	N/cen & Jank	
DATE	1/23/14	

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: EQT Gathering, LLC, c/o Megan Landfried

ADDRESS: 115 Professional Place, Bridgeport, WV 26330

TELEPHONE NUMBER: (304) 848-0061

BUILDER'S NAME: Apex Pipeline Services, Inc. **ADDRESS:** 503 River Road, Nitro, WV 25143

TELEPHONE NUMBER: 304-204-0080

ENGINEER'S NAME: Jarrett M. Smith, P.E. / Potesta & Associates, Inc.

ADDRESS: 7012 MacCorkle Avenue, SE, Charleston, WV 25304

TELEHONE NUMBER: (304) 342-1400

PROJECT LOCATION:

PROJECT LOCATIONS AND ADJACENT LAND OWNERS.****

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT):

DISTRICT:

DATE/FROM WHOM PROPERTY PURCHASED:

LAND BOOK DESCRIPTION:

DEED 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

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT): ***SEE ATTACHED FOR

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				
0 0 0 0	New Struct Addition Alteration Relocation Demolition Manufactu		bil Home		0 0 0 0	Reside Non-re Comb	ential (esiden	1 – 4 Family) more than 4 Family) tial (floodproofing) se (res. & com.) t	
В.	OTHER DE	VEOPLI	MENT ACTIV	/ITIES:					
(x) (x) (x) (0 (x) (0 (0)	Watercour Drainage Ir Road, Stree Subdivision	se Alteronprovement, or Brid (including)	Mining for STRUCTUF ation (includinate) nents (includinate) dge Construct ng new expan Sewer Systen fy)	ng dredg ng culver ion (TEM nsion)	ing and ch t work)	Γ check nannel			

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:
Crossing 1 - \$81.817 Crossing 2 - \$122,726 Crossing 3 - \$215,012 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:_____ NAME:_____ ADDRESS: 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:_____ NAME:____ ADDRESS: ADDRESS:____

NAME:_____

ADDRESS:_____

NAME:____

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.

NAME (PRINT): Megan Landfried

n

- (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.

SIGNATURE: // Kyn & Jang	DATE:_	1/23/14
After completing SECTION 2, APPLICANT sh Administrator/Manager or his/her represen	-	
SECTION 3: FLOODPLAIN DETERMIN Administrator/Manager or his/her r		y Floodplain
THE PROPOSED DEVELOPMENT:		
THE PROPOSED DEVELOPMENT IS LOCATED	OON:	
FIRM Panel: 115C + Dated: 10 - 4-11	20 C	

review is complete and NO FLOOPLAIN DEVELOPMENT PERMIT IS REQUIRED).

Is **NOT** located in a Specific Flood Hazard Area (Notify applicant that the application

[]	Is located in Special Flood Hazard Area.	
	FIRM zone designation	
	100-Year flood elevation is:	
()	Unavailable	
0	The proposed development is located in a floodway. FBFM Panel No	Dated
[]	See section 4 for additional instructions.	•
	SIGNED	DATE
	CTION 4: ADDITIONAL INFORMATION REQUIRED COMPOSITION AND ADDITIONAL INFORMATION REQUIRED COMPOSITION ADDITIONAL INFORMATION REQUIRED COMPOSITION AND ADDITIONAL ADDITIONAL PROPRIESTA COMPOSITION AND ADDITIONAL ADDITIONAL PROPRIESTA COMPOSITION AND ADDITIONAL PROPRIESTA COMPOSIT	
	e applicant must submit the documents checked below becessed.	efore the application can be
0	A plan showing the location of all existing structures, dimensions and proposed development.	water bodies, adjacent roads, lot
0	Development plans, drawn to scale, and specification details for anchoring structures, storage tanks, proportional (including basement or crawl space), types of water refirst floor, details of flood proffing of utilities located enclosures below the first floor. Also	sed elevation of lowest floor, esistant materials used below the below the first floor and details of
()	Subdivision or other development plans (If the subdivious or 5 acres, whichever is the lesser, the applicant elevations if they are not otherwise available).	
0	Plans showing the extent of watercourse relocation a	nd/or landform alterations.
0	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.
0	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).
0	Other:
SE C	
<u>3EÇ</u>	FION 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 Reful Samborar DATE 3-6-14
	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:
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: 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____

, <u></u>	
SECTION 8:	: CERTIFICATE OF COMPLIANCE (To be completed by Floodplain
	tor/Manager or his/her representative).
Certificate of	Compliance issued: DATE:BY:
_	CERTIFICATE OF COMPLIANCE
j	FOR DEVELOPMENT IN SPECIAL FLOOD HAZARD AREA
	(OWNER MUST RETAIN)
	PERMIT NUMBER:
	PERMIT DATE:
	PURPOSE –
ONSTRUCTIO	ON LOCATION:
WNER'S ADD	DRESS:

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.

SIGNEDDATE

Crossing #1

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT: Eleanor Meyer ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT): 19 HEATH PLACE

GARDEN CITY, NY 11530 DISTRICT: West Union

DATE/FROM WHOM PROPERTY PURCHASED: N/A

LAND BOOK DESCRIPTION: ARNOLDS CREEK 349.75 AC (SURFACE)

DEED BOOK REFERENCE: WB10/526

TAX MAP REFERENCE: 8-14-6

EXISTING BUILDINGS/USES OF PROPERTY: Class 2

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT

PROPERTY: N/A

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

SUBJECT PROPERTY N/A

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).

ADDRESS: 365 DYE DR BRIDGEPORT, WV 26330	ADDRESS: 19 HEATH PLACE GARDEN CITY, NY 11530
NAME:ADDRESS:	NAME:ADDRESS:

Crossing #2

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT: Eleanor Meyer ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT): 19 HEATH PLACE

GARDEN CITY, NY 11530 DISTRICT: West Union

DATE/FROM WHOM PROPERTY PURCHASED: N/A

LAND BOOK DESCRIPTION: ARNOLDS CREEK 349.75 AC (SURFACE)

DEED BOOK REFERENCE: WB10/526

TAX MAP REFERENCE: 8-14-6

EXISTING BUILDINGS/USES OF PROPERTY: Class 2

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT

PROPERTY: N/A

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

SUBJECT PROPERTY N/A

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: Anthony J. Mancusco ADDRESS: 365 DYE DR BRIDGEPORT, WV 26330

NAME: MCGILL MARK A & CLARA J (SURV)

ADDRESS: RT 1 BOX 258 WEST UNION, WV 26456

NAME:	NAME:
ADDRESS:	ADDRESS:

Crossing #3

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT: WV RAILROAD MAINTENANCE

AUTHORITY

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT): PO BOX 470

MOOREFIELD, WV 26836

DISTRICT: Central

DATE/FROM WHOM PROPERTY PURCHASED: N/A

LAND BOOK DESCRIPTION: 25.96 AC CENTRAL DISTRICT

DEED BOOK REFERENCE: 216/166 TAX MAP REFERENCE: 1-7-94

EXISTING BUILDINGS/USES OF PROPERTY: Class 3

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT

PROPERTY: N/A

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

SUBJECT PROPERTY N/A

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: EQUITRANS INC

ADDRESS: 100 ALLEGHENY CENTER MALL

PITTSBURGH, PA 15212

NAME: ROSS TERRY K & JO ANN (SURV)

ADDRESS: BOX 141

WEST UNION, WV 26456

NAME: AMERICA RICKY A ETUX & ALBERT R RICHARDS ETUX (SURV)

ADDRESS: RT 1 BOX 325 WEST UNION, WV 26456

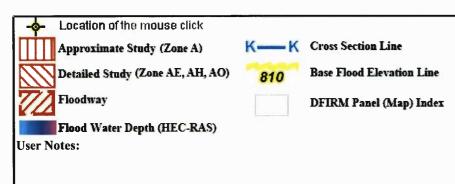
NAME: EAKLES HOWARD ADDRESS: RT 1 BOX 325C WEST UNION, WV 26456 NAME UPSCOMB RONNA J ADDRESS: RT 1 BOX 270A WEST UNION, WV 26456

NAME: SEAHORN WILLIAM PONDER III & RUTH REBECCA JOHNSON

ADDRESS: BOX 1483 WEST UNION, WV 26456 **MOSA SO15 - Claylick Run Crossing**



Map Created on 1/23/2014



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: Selected site is WITHIN the

FEMA 100-year floodplain.

Flood Zone: A

Advisory Flood Height: About 808 feet

Water Depth: About 1.03 feet (Source: HEC_RAS)

Elevation: About 806 feet

Location (long, lat): 80.818280 W, 39.276897 N

Location (UTM 17N): (515674, 4347521) **FEMA Issued Flood Map:** 54017C0115C

Contacts: Doddridge County

CRS Information: No CRS information available

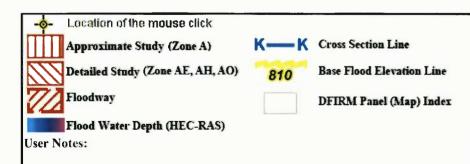
Flood Profile: No Profile
HEC-RAS Model: No Model

MOSA SO15 - Arnolds Creek Crossing #1



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 1/23/2014



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: Selected site is WITHIN the

FEMA 100-year floodplain.

Flood Zone: A

Advisory Flood Height: About 807 feet

Water Depth: About 8.48 feet (Source: HEC RAS)

Elevation: About 799 feet

Location (long, lat): 80.811999 W, 39.276498 N

Location (UTM 17N): (516216, 4347477) FEMA Issued Flood Map: 54017C0120C

Contacts: Doddridge County

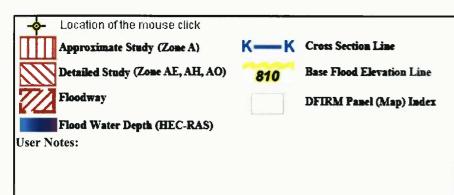
CRS Information: No CRS information available

Flood Profile: No Profile **HEC-RAS Model: No Model**

MOSA SO15 - Arnolds Creek Crossing #2



Map Created on 1/23/2014



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: Selected site is WITHIN the

FEMA 100-year floodplain.

Flood Zone: A

Advisory Flood Height: About 790 feet

Water Depth: About 9.40 feet (Source: HEC RAS)

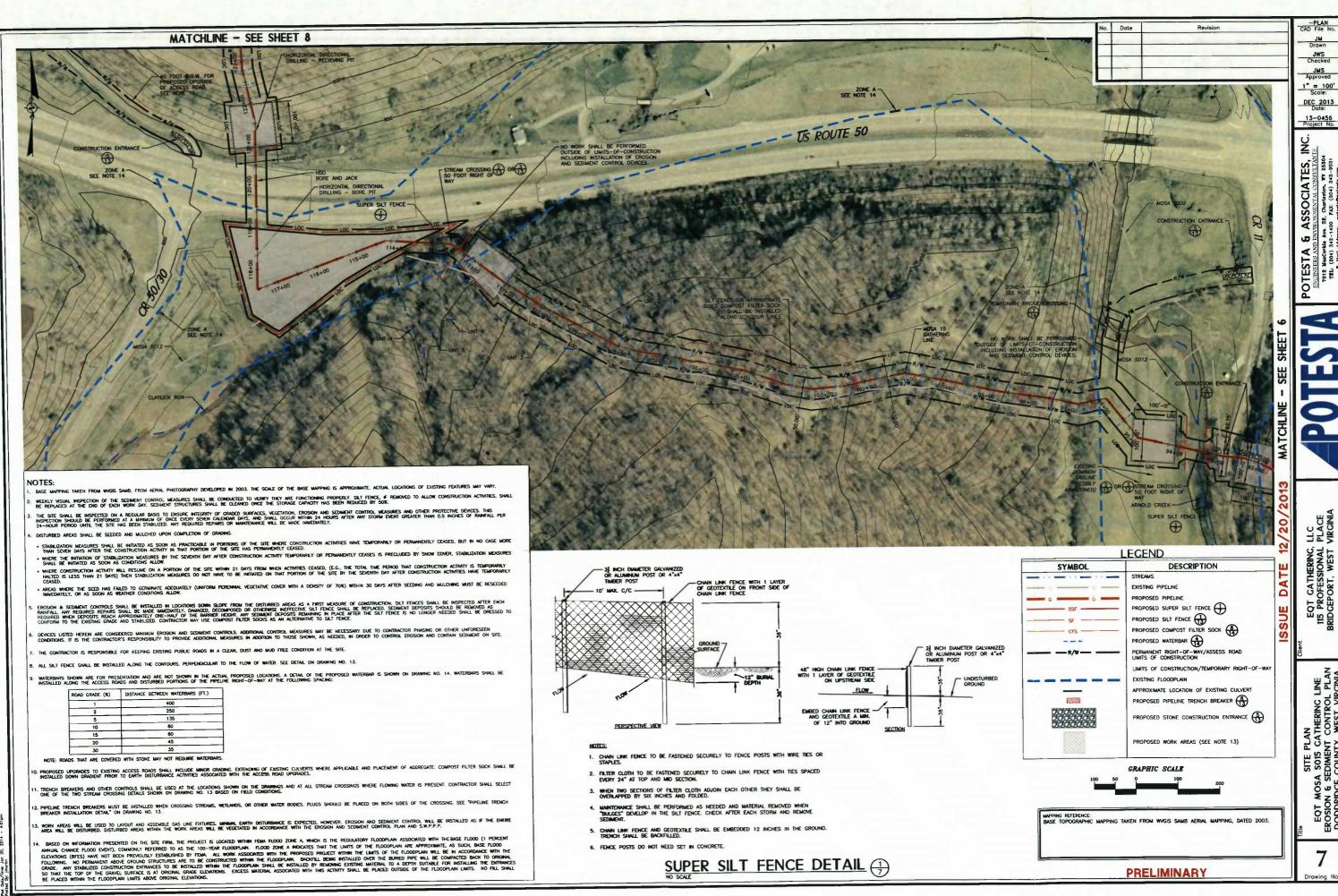
Elevation: About 781 feet

Location (long, lat): 80.821074 W, 39.294639 N **Location (UTM 17N):** (515429, 4349489) **FEMA Issued Flood Map:** 54017C0115C

Contacts: Doddridge County

CRS Information: No CRS information available

Flood Profile: No Profile
HEC-RAS Model: No Model



Flags: Flags: HFI1-06:50 N-F71-10:50 N-F71-15:50 N-E71-01:50 N-E71-04:50 N-E71-15:50 S)(CDD-Proj-PR)(2013/13-04:50-E071-16:50-24)

- CHAIN LINK FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- 3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE. CHECK AFTER EACH STORM AND REMOVE SEDIMENT.
- CHAIN LINK FENCE AND GEOTEXTILE SHALL BE EMBEDDED 12 INCHES IN THE GROUND. TRENCH SHALL BE BACKFILLED.

SUPER SILT FENCE DETAIL (1)

- ING TAKEN FROM WYGIS SAMB, FROM AERIAL PHOTOGRAPHY DEVELOPED IN 2003. THE SCALE OF THE BASE MAPPING IS APPROXIMATE, ACTUAL LOC
- WEEKLY VISUAL INSPECTION OF THE SEDMENT CONTROL MEASURES SHALL BE CONDUCTED TO VERBY THEY ARE FUNCTIONING PROPERLY. SET FENCE, IF REMOVED TO ALLOW CONSTRUCTION ACTIVITIES, SHALL BE REPLACED AT THE END OF EACH WORK DAY. SEDMENT STRUCTURES SHALL BE CLEANED ONCE THE STORAGE CAPACITY HAS BEEN REDUCED BY SOX.
- THE SITE SHALL BE INSPECTED ON A REQULAR BASIS TO ENSURE INTEGRITY OF GRADED SURFACES, VEGETATION, EROSION AND SEDMENT CONTROL MEASURES AND OTHER PROTECTIVE DEVICES. INSPECTION SHOULD BE PERFORMED AT A MINIMUM OF ONCE EVERY SEVEN CALENDAR DAYS, AND SHALL OCCUR WITHIN 24 HOURS AFTER MY STORM EVENT GREATER THAN 0.5 INCHES OF RAP 24-HOUR PERIOD UNTIL THE SITE HAS BEEN STABILIZED. ANY REQUIRED REPAIRS OR MAINTENANCE WILL BE MADE INMEDIATELY.

- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARLY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED.

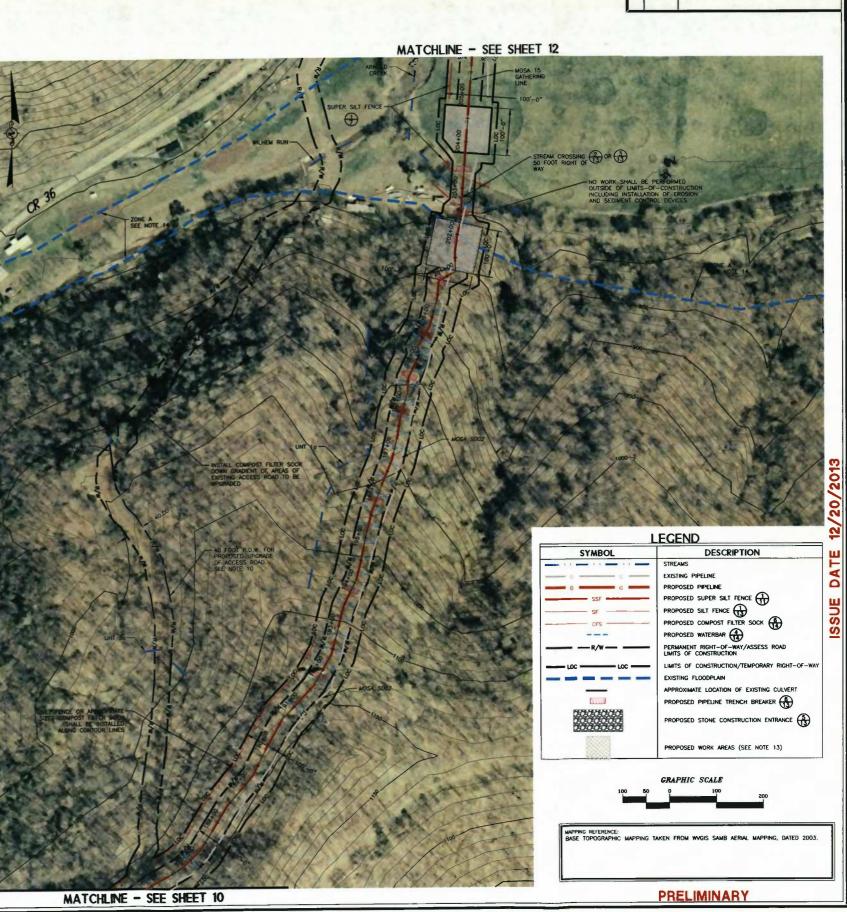
 WHERE THE INITIATION OF STABILIZATION MEASURES BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARLY OR PERMANENTLY CEASES IS PRECLIDED BY SHOW COMER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS CONDITIONS ALLOW.

 ***INITIATED TO SHALL S
- WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G., THE TOTAL TIME PERSOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY
 HALTED IS LESS THAN 21 DAYS) THEN STABILIZATION WEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITIES HAVE TEMPORARILY
 CLASSED.
- AREAS WHERE THE SEED HAS FAILED TO GERMANTE ADEQUATELY (UNIFORM PERCHANAL VEGETATIVE COVER WITH A DEMSITY OF 70%) WITHIN 30 DAYS AFTER SEEDING AND MULCI-WING MUST BE RESEEDED MINEDATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.
- EROSION & SEDMENT CONTROLS SHALL BE INSTALLED IN LOCATIONS DOWN SLOPE FROM THE DISTURBED AREAS AS A FIRST MEASURE OF CONSTRUCTION, SLIT FEMCES SHALL BE INSPECTED AFTER EACH RANKERAL, ANY RECURRED REPLACED REPLACED SEDMENT DEPOSTS SHOULD BE REMOVED AS RECOVERD WHEN REQUIRED WHEN DEPOSTS BEEN APPROXIMATELY ONE—MATE FROM HEIGHT. ANY SEDMENT DEPOSTS REMAINING IN PLACE AFTER THE SLIT FEMCE IS NO LONGER NEEDED SHALL BE UNDER DEPOSTS BEEN APPROXIMATELY ONE—MATE OF THE BURREN HEIGHT. ANY SEDMENT DEPOSTS REMAINING IN PLACE AFTER THE SLIT FEMCE IS NO LONGER NEEDED SHALL BE DRESSED TO CONFIDENT OF THE EXISTING GRADE AND STABILIZED, CONTRACTOR MAY USE COMPOST FLITER SOCKS AS AN ALTERNATIVE TO SLIT FEMCE.
- DEVICES LISTED HEREIN ARE CONSIDERED MINIMUM EROSION AND SEDIMENT CONTROLS. ADDITIONAL CONTROL MEASURES MAY BE NECESSARY DUE TO CONTROLTOR PHASING OR OTHER UNFORESEEN CONDITIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADDITIONAL MEASURES IN ADDITION TO THOSE SHOWN, AS NEEDED, IN ORDER TO CONTROL EROSION AND CONTAIN SEDIMENT ON SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING EXISTING PUBLIC ROADS IN A CLEAN, DUST AND MUD FREE CONDITION AT THE SITE.
- ALL SILT FENCE SHALL BE INSTALLED ALONG THE CONTOURS, PERPENDICULAR TO THE FLOW OF WATER, SEE DETAIL ON DRAWING NO. 13.
- WATERBARS SHOWN ARE FOR PRESENTATION AND ARE NOT SHOWN IN THE ACTUAL PROPOSED LOCATIONS. A DETAIL OF THE PROPOSED WATERBAR IS SHOWN ON DRAWING NO. 14. WATERBARS SHALL BE INSTALLED ALONG THE ACCESS ROADS AND DISTURBED PORTIONS OF THE PIPELINE RIGHT-OF-WAY AT THE FOLLOWING SPACING:

ROAD GRADE (%)	DISTANCE BETWEEN WATERBARS (FT.)
1	400
2	250
5	135
10	80
15	60
20	45
10	35

NOTE: ROADS THAT ARE COVERED WITH STONE MAY NOT REQUIRE WATERBARS.

- . PROPOSED LIPGRADES TO EXISTING ACCESS ROADS SHALL INCLUDE MINOR GRADING, EXTENDING OF DESTING CULVERTS WHERE APPLICABLE AND PLACEMENT OF AGGREGATE, COMPOST FILTER SOCK SHALL BE INSTALLED DOWN GRADIENT PRICE TO EARTH DISTURBANCE ACTIVITIES ASSOCIATED WITH THE ACCESS ROAD UPGRADES.
- . TRENCH BREAKERS AND OTHER CONTROLS SHALL BE USED AT THE LOCATIONS SHOWN ON THE DRAWINGS AND AT ALL STREAM CROSSINGS WHERE FLOWING WATER IS PRESENT. CON ONE OF THE TWO STREAM CROSSING DETAILS SHOWN ON DRAWING NO. 13 BASED ON FIELD CONDITIONS.
- PIPELINE TRENCH BREMERS MUST BE INSTALLED WHEN CROSSING STREAMS, WETLANDS, OR OTHER WATER BODIES. PLUGS SHOULD BE PLACED ON BOTH SIDES OF THE CRO BREAKER INSTALLATION DETAL." ON DRAWING NO. 13.
- S. WORK AREAS WILL BE USED TO LAYOUT AND ASSEMBLE CAS LINE FIXTURES. WINIMAL EARTH DISTURBANCE IS EXPECTED, HOWEVER, EROSION AND SEDMENT CONTROL WILL BE INSTALLED AS IF THE ENTIRE AREA WILL BE DISTURBED, DISTURBED AREAS WITHIN THE WORK AREAS WILL BE VEGETATED IN ACCORDANCE WITH THE EROSION AND SEDMENT CONTROL PLAN AND SWIP.P.P.
- 4. BASED ON INFORMATION PRESENTED ON THE SITE FIRM, THE PROJECT IS LOCATED WITHIN FEMA FLOOD ZONE A, WHICH IS THE REQUILIBRAY FLOODPLAIN ASSOCIATED WITH THE BASE FLOOD (1 PERCENT ANNUAL CHANCE FLOOD EVENT), COMMONLY REFERRED TO AS THE 100-YEAR FLOODPLAIN. FLOOD ZONE A MIDCATES THAT THE LIMITS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOOD ZONE A MIDCATES THAT THE LIMITS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOOD ZONE A MIDCATES THAT THE LIMITS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOOD ZONE AND ADDRESS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOOD ZONE AND ADDRESS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOOD ZONE AND ADDRESS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOODPLAIN ARE ASSOCIATED WITH THE LIMITS OF THE FLOODPLAIN ARE APPROXIMATE, AS SUCH, BASE FLOODPLAIN ARE ASSOCIATED WITH THE LIMITS OF THE FLOODPLAIN LIMITS. HO FILL SHALL BE PLACED OUTSIDE OF THE FLOODPLAIN LIMITS. HO FILL SHALL BE PLACED WITHIN THE FLOODPLAIN LIMITS. ABOVE ORIGINAL ELEVATIONS.



Drawn JWS Checked

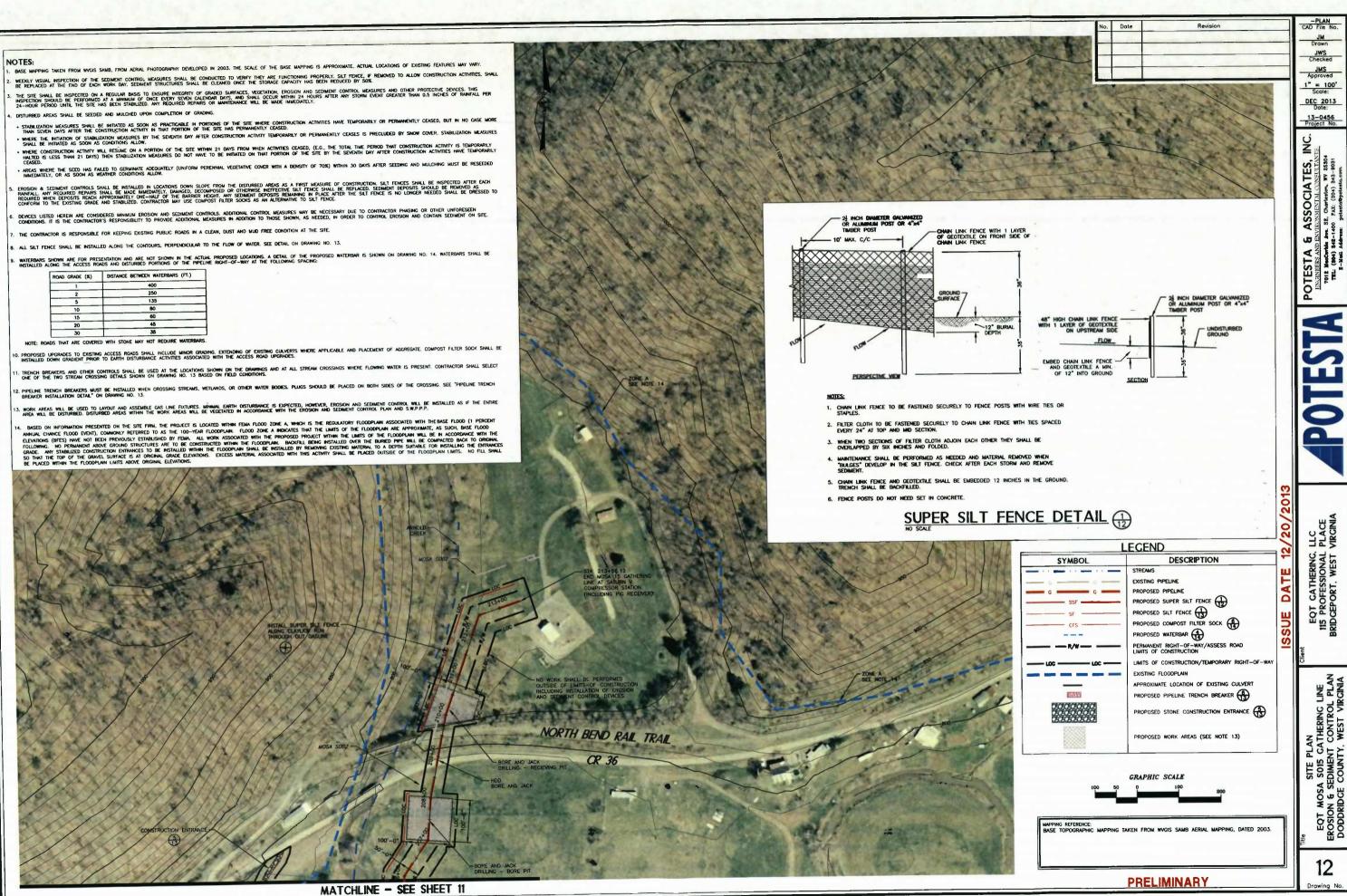
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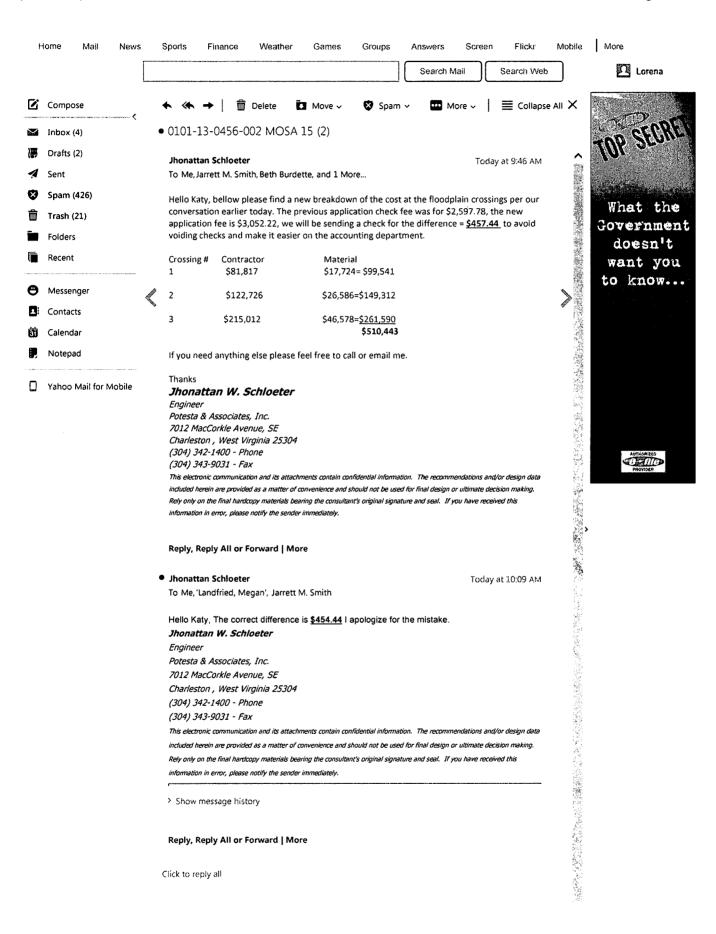
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POTESTA ENCINEERS AND 7012 Moscorkin TEL: (304) 34

EQT CATHERING, I 115 PROFESSIONAL I BRIDGEPORT, WEST N



JWS Checked



(



Dan Wellings <wellingsd8@gmail.com>

EQT MOSA S015 GATHERING LINE FLOODPLAIN APP.

1 message

Dan Wellings <wellingsd8@gmail.com>
To: "Jarrett M. Smith" <JMSmith@potesta.com>

Tue, Feb 4, 2014 at 9:42 AM

Jarrett,

I need an itemized breakdown of total construction costs of POTESTA Project # 0101-0456-001 for EQT.
It isn't good enough to just plug in \$419,555 on the application.
I need to see how you arrived at that amount.

Just e-mail me the figures.

On another note I signed off on the floodplain application for EQT OXF 156 Well Site yesterday and it should be in the mail. Not in floodplain. No permit needed.

Dan Wellings, PS Doddridge County Floodplain Manager

Dear Doddridge County Clerk's Office;

In response to the certified letter Mark and I received on February 8, 2014, dated February 4, 2014 concerning EQT's application for a permit to develop land in a floodplain adjacent to our property, I am writing to record a few concerns we have.

First, I have accessed the WV Flood Tool Maps and have printed and enclosed a copy of the area of subject. I would propose to you that this map is incomplete. While the area highlighted in red as per the website does indeed flood, there is really nothing there of worth on the Sunnyside (South) of Rt. 50 up to my home. But please take note of the areas I have highlighted in yellow, showing the neighborhood further past our home and that I can assure you floods with very little rainfall. The Clay Lick is a catch all for the runoff of the surrounding hills in our neighborhood and floods quite easily, thus my neighbors have indeed been subjected to many flood cleanups, not only their yards and around their homes but in their homes as well. Most of the residents upstream are elderly and some are disabled. One neighbor even lost pets that became trapped in kennels in his back yard by floodwaters.

Second, Mark and I signed a right of way lease agreement with EQT two years ago in January (2012). I will admit that one of the ensuing issues we have with EQT was because Mark and I did not get every detail we required in writing. Specifically, that nothing be sticking up above the ground. We simply had a verbal assurance from the representative of Land Management, and that is to our discredit. When the work was complete, there was and still is a tie in location in our field, with several pipes and gauges sticking up just mere feet away from the property lines between us and the heirs to which the bulk of the business is being conducted with EQT.

We have been in conflict with EQT Production since the summer/fall of 2012 when their work was complete. We have been insisting that they move their tie in equipment and more importantly, that they clean up the mess they left us with, a massive swamp in our field. It is a violation of their contract agreement, Page 5, Special Conditions, item 5 and 6. I have also enclosed pictures of that mess. No one is responding.

So my writing this letter is two fold. To record the fact that there are additional flooding potentials not addressed on the mapping by FEMA. The upper neighborhood of Sunnyside has not been marked as flood prone. Secondly to state that EQT has not been honest and forthcoming in their dealings with Mark and I. So regardless of what their plans are for development in this proposed floodplain, whether it be minimal or significant, I do not trust that they can be held simply and exclusively to the plans they have put forth in their permit requests. It would take very little to disrupt the flow of a very winding, normally small stream, to cause massive problems for the residents of this community.

Please record my letter as rebuttal to the EQT Permit for floodplain development, consider my remarks thoroughly, and proceed with caution as you consider whether to grant their request. In these matters there is so much more to consider than the progress and financial gain of a big company like EQT. Mark and I learned a hard lesson, and it is my hope to prevent our neighbors and friends from suffering the same misfortune.

Most Sincerely,

211 Sunnyside Rd. West Union, WV 26456

(304)873-1917

clara.mcgill@gmail.com

Mosan

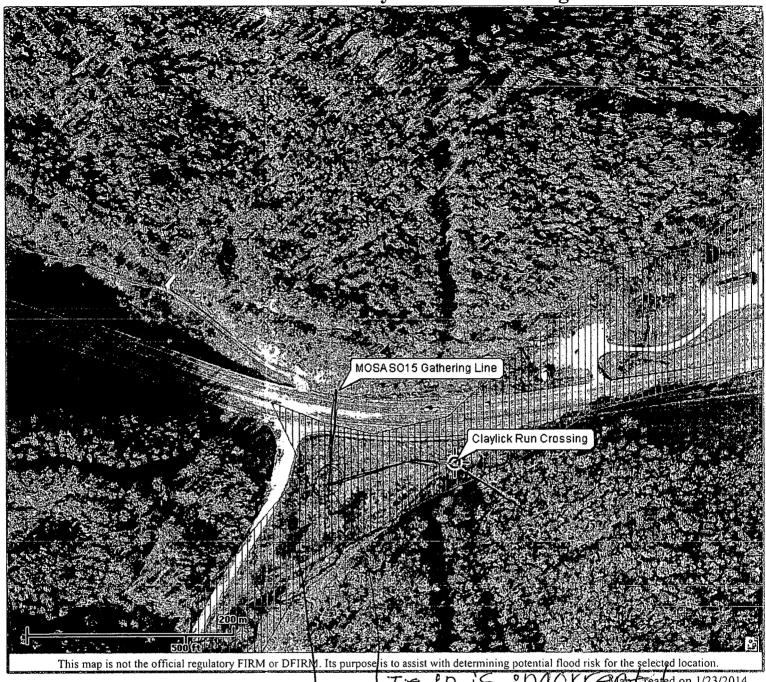
EQT Gathering LLC

115 Professional Place

Bridge Port, WU
26330

214/14-Mailed Copus

MOSA SO15 - Claylick Run Crossing



Location of the mouse click K Cross Section Line Approximate Study (Zone A) Base Flood Elevation Line Detailed Study (Zone AE, AH, AO) 810 Floodway DFIRM Panel (Map) Index Tie in actually here Flood Water Depth (HEC-RAS)

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)

Photo Pylab Created on 1/23/2014

Flood Hazard Area: Selected site is WITHIN the FEMA 100-year floodplain

Flood Zone: A

Advisory Flood Height: About 808 feet

Water Depth: About 1.03 feet (Source: HEC_RAS)

Elevation: About 806 feet

Location (long, lat): 80.818280 W, 39.276897 N

Location (UTM 17N): (515674, 4347521) FEMA Issued Flood Map: 54017C0115C

Contacts: Doddridge County

CRS Information: No CRS information available

Flood Profile: No Profile **HEC-RAS Model:** No Model

Dear Doddridge County Clerks Office and County Commission;

In further discussion of my letter dated February 12, 2014 I would like to add an additional map that I found enclosed with documents I had copied from the Clerks Office upon delivery of my first letter. Documents I had copied of EQT's plans for a project to be completed with in the floodplain area near my home. I do not claim to be knowledgeable of EQT's operations or even claim that I know how to read and understand their maps with certainty. What I do claim and understand is EQT's methods of deceit and dishonesty in our dealings with them since 2012.

With that being said, it is my opinion that in looking at the map of their proposed project, I believe them to have submitted an inaccurate map for the permit they request. If I am reading their tie in location for the project as marked on my map I can assure you it is not there at this current time. The actual tie in location is, as marked on my map, across another creek and on my land in a swampy wetland area. An area, and the actual tie in apparatus itself that has been a source of contention between EQT and us for 2 years now.

So please review all the necessary papers and submissions, come out to our house and look, we will escort you ourselves to the field and show you, and then proceed accordingly, and might I suggest, with caution.

Most Sincerely.

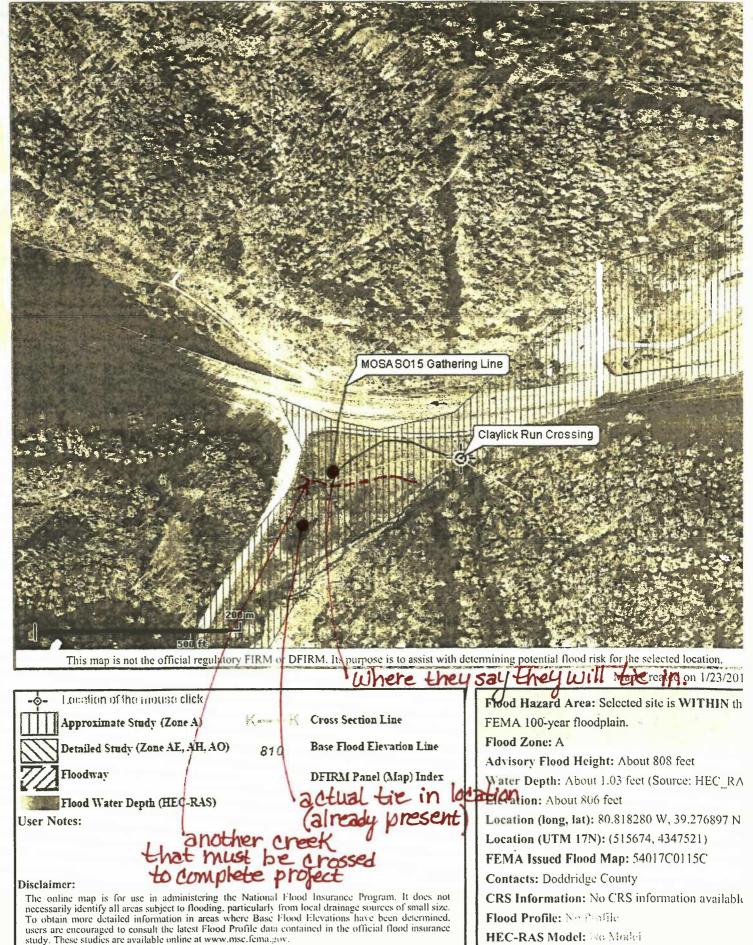
Clara J. McGill

211 Sunnyside Rd. West Union, WV 26456

(304)873-1917

clara.mcgill@gmail.com

Inaccurate map submitted by EQT for floodplain permit. MOSA SO15 - Claylick Run Crossing



Parcel Number:

WV Flood Tool is supported by FEMA, WV NFIP Office, and WV GIS Technical Center

(http://www.MapWV.gov/flood)

WV Flood Map



Map Created on 2/12/2014

-0-

Location of the mouse click



Flood Hazard Zone (1% annual chance floodplain) my home

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

Flood Hazard Area: Selected site is WITHIN the

FEMA 100-year floodplain.

Elevation:

Location (long, lat): 80.878501 W, 39.635755 N

Location (UTM 17N):

FEMA Issued Flood Map: 54103C0038C

Contacts: Wetzel County

CRS Information: No CRS information available





This is the swamp EQT left us with in 2012.



POTESTA Engineers and Environmental Consultants

7012 MacCorkle Avenue. SE, Charleston, WV 25304 • (304)342-1400 • FAX (304)343-9031; www.potesta.com

February 20, 2014

Doddridge County Floodplain Coordinator **Doddridge County Commission** 118 East Court Street West Union, West Virginia 26456

RE:

Floodplain Permit Application – Response to Comments received from Mrs. McGill

EOT Gathering, LLC

EQT MOSA SO15 Pipeline Project Doddridge County, West Virginia

POTESTA Project No. 0101-13-0456-001

Dear Floodplain Coordinator:



POTESTA & Associates, Inc., on behalf of EQT Gathering, LLC, has prepared a response to the letter written by Mrs. Clara McGill on February 12, 2014 which included concerns about the proposed MOSA SO15 buried pipeline project (Project). Mrs. McGill wrote in regards to the floodplain limits along Claylick Run. A section of the MOSA-S015 Pipeline Project is located at the intersection of Sunnyside Road and US Route 50 adjacent to Mrs. McGill's Property. From approximate centerline stations 112+10 to 119+00, the Project is located within FEMA Flood Zone A. Flood Zone A is the regulatory floodplain associated with the Base Flood (1 percent annual chance flood event), commonly referred to as the 100-year floodplain and indicates that the limits of the floodplain are approximate; as such, Base Flood Elevations (BFEs) have not been previously established by FEMA. Work within the floodplain associated with the Project shall include installation of a buried pipeline and associated work areas. The work areas for this project are used to layout and assemble gas line fixture, are associated with minimal disturbance, and are temporary. All structures associated with the Project within the limits of the floodplain will be buried. The Project area will be returned to precondition contours and no permanent aboveground structures are to be constructed within the floodplain. The construction proposed at this location is not anticipated to impact the floodplain or Mrs. McGill's property.

Floodplain Coordinator February 20, 2014 Page 2

If you have any questions, please feel free to contact me at (304) 342-1400 or jmsmith@potesta.com, or Megan Landfried (EQT) at (304) 848-0061.

Sincerely,

POTESTA & ASSOCIATES, INC.

Jarrett M. Smith, P.E. Senior Engineer

JMS/clr

c: Ms. Megan Landfried – EQT (via email)

8
FEBRUARY 11, 2014
Legal
Legal Advertisement
Pedal ADVERTISEMENT. Dedringe County
Floodplain/Permit Application Please in kendice that on the discount of the control of the contr
Floodplain/Permit Application Please lase notice that on the day of February, 2014 E.O.F. CATHERING, L.E.C. MOSA - 5015 CATHERING, LINE 14, 1195 (led an application for a Floodplain) Permit Oster op land located a 76
Permit to develop land focated at or about: SURFACE. OWNERS: ELEANOR MESSES
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94 14-6 & 1-7
The Application using the with the Gerk of the County, Court and may be impected or the County,
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124, 2014 Prebruary
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OFFICIAL SEAL
Notary Public, State Of West Virginia
LAURA J ADAMS
212 Edmond Street
West Union, WV 26456
My Commission Expires June 14, 2023

published regularly, in Doddridge County, West Virginia, Do Hereby Certify Upon Oath That the Accompanying Legal Notice
Entitled: Floodplain Permit
EGT - MOSA-5015
D 14-119
was published in said paper for 2
successive weeks beginning with the issue
of February 11 th 2014 and
ending with the issue of
February 18th 2014 and
that said notice contains 1.8.9
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STATE OF WEST VIRGINIA.

COUNTY OF DODDRIDGE, TO WIT

I, Virginia Nicholson, Editor of THE HERALD RECORD, a weekly newspaper



POTESTA Engineers and Environmental Consultants

7012 MacCorkle Avenue, SE, Charleston, WV 25304 • (304)342-1400 • FAX (304)343-9031; www.potesta.com

January 27, 2014

Mr. Dan Wellings Doddridge County Floodplain Manager **Doddridge County Commission** 118 East Court Street West Union, West Virginia 26456

RE: Hydraulic Analysis Results along Arnolds Creek **EQT Proposed Temporary Timber Mat**

Doddridge County, West Virginia Potesta Project No. 0101-13-0456-001

Dear Mr. Wellings:

Potesta & Associates, Inc. (POTESTA) is pleased to present the findings of a hydraulic analysis conducted on Arnolds Creek located in Doddridge County, West Virginia. This work was completed on behalf of EQT Gathering, LLC (EQT). The purpose of this study was to estimate the Base Flood Elevation (BFE) (one percent annual) at the site and determine the potential increase in BFEs resulting from the placement of temporary timber mat crossing (Crossing) for transporting of equipment and supplies across Arnolds Creek for the MOSA SO15 Gathering Line project.

BACKGROUND

The project area is proposed for construction activities associated with the MOSA SO15 Gathering Line project early this year. EQT is proposing to construct the Crossing to provide access across Arnolds Creek to better facilitate construction activities of the natural gas pipelines. The proposed Crossing is located along Arnolds Creek just south of the intersection of CR-11 and US Route 50 in Doddridge County, West Virginia. Approximate coordinates of the crossing are latitude 39°16'35.16"N and longitude 80°48'44.18"W. The location of the project site is shown on WV Flood Map in Appendix A.

The project site is located in Flood Zone A, as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 54017C0120C, dated October 4, 2011. Flood Zone A represents the 100-year floodplain and is regulated by the Doddridge County Planning Commission (DCPC). Flood Zone A has been determined by FEMA by approximate methods, in that BFEs have not previously been determined. Because

hydraulic analyses were not performed for Zone A, the Special Flood Hazard Area (SFHA) shown on the FIRM have been approximated graphically based on available topographic mapping and do not represent actual elevations. A copy of the FIRM is included in Appendix B.

MODELING DATA

As stated above, the project site is located in Flood Zone A; as such, previous hydraulic studies of the area have not been prepared by FEMA. POTESTA utilized topographic mapping taken from WVGIS SAMB Aerial Mapping (Dated 2003) for generating cross sections for this project. Cross sections extended downstream of the site approximately 959 feet. Cross sections were extended upstream of the site approximately 1,335 feet. The location of these cross sections is indicated on the attached POTESTA "Hydraulic Analysis" located in Appendix A.

The USGS regression equation was considered when computing the peak flow rate for the 1 percent annual flood event. This method is further described below.

USGS Regression Equation Method

The regression equation, as outlined in the United States Geological Survey (USGS) report entitled Estimating Magnitude and Frequency of Peak Discharges in Rural, Unregulated, Streams in West Virginia (2000) (U.S. Department of the Interior, 2000), was the first method considered to compute the one-percent annual flow rate for the project site. This method of computing flood discharges is the same used for many of the streams modeled in the FEMA Flood Insurance Studies in West Virginia. The one-percent annual peak flow rate computed using this method was 3,123 cubic feet per second (cfs). Hydrologic calculations are located in Appendix C.

MODELING APPROACH

Two computer models were developed to show the effects of the timber mat crossing. The first model (i.e., existing conditions model) was developed to estimate the base flood elevation of the site. The second model (i.e., proposed conditions model) was developed to determine the increase in base flood elevations resulting from the timber mat crossing. The computer models were run using the 2008 version of HEC-RAS Version 4.0.0.

The following narratives summarize the details of each of the two models.

Existing Conditions Model

The model consists of nine primary cross sections. Geometry for cross sections was obtained using WVGIS SAMB Aerial Mapping (Dated 2003). Geometry for cross sections is summarized in spreadsheets located in Appendix D. The cross sections extend downstream of the site approximately 1,335 feet, and upstream of the site approximately 959 feet. Location and



Mr. Dan Wellings January 27, 2014 Page 3

alignment of the cross sections used for the HEC-RAS computer model are shown on Figure 2 located in Appendix A.

Manning's roughness coefficients, or "n" values for Arnolds Creek were estimated from photographs taken during a site visit. Manning's coefficients used in the model consist of 0.045 for the stream channel and 0.030 for overbank areas.

As shown on Table 1 in Appendix E, the HEC-RAS model resulted in an approximate BFE of 807.10 feet near the project site (cross section 1,315). Approximate BFEs for other cross sections are also shown on Table 1 in Appendix E. A computer generated summary report of the HEC-RAS computations is provided in Appendix F.

Proposed Conditions

The HEC-RAS model for the proposed conditions scenario was modified from the existing conditions model to include the geometry of the proposed timber mat crossing.

When creating the proposed conditions model, the temporary crossing was modeled by adding a bridge section at the approximate location of the proposed crossing (Station 1,335). These dimensions of the timber mat were estimated utilizing dimensions of typical timber mats along with the supporting structures. The proposed deck width is 15 feet and the average cross sectional area of each of the two support piers is approximately 1 foot.

As shown on Table 1 in Appendix E, the BFE at the nearest upstream cross section, 25 feet from the proposed timber mat crossing does not show an increase in the BFE. The next cross section upstream is 174 feet from the proposed timber mat crossing and it will be increased 0.01 feet as a result of construction of the temporary crossing which is the maximum increase in BFE within the study area. A computer generated summary report of the HEC-RAS computations is provided in Appendix F.

SUMMARY OF RESULTS

As summarized in Table 1 located in Appendix E, it was determined that there may be a 0.01 feet increase in 100-year flood elevations resulting from construction of the proposed temporary crossing when comparing the existing conditions and the proposed conditions.



Mr. Dan Wellings January 27, 2014 Page 4

If you have any questions or require additional information, please do not hesitate to call me at (304) 342-1400 or email me at jmsmith@potesta.com.

Sincerely,

POTESTA & ASSOCIATES, INC.

Jarrett M. Smith, P.E.

Senior Engineer

JMS/clr

Enclosures: Appendix A - Drawings

Appendix B - Flood Insurance Rate Map (FIRM)

Appendix C - One Percent Annual Flow Rate Determination

Appendix D - Cross Section Input Data

Appendix E - Table 1

Appendix F - HEC-RAS Results

c: Ms. Megan Landfried - EQT

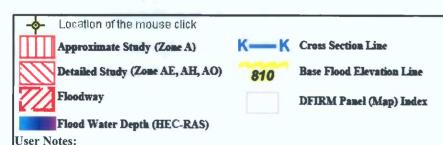
APPENDIX A

Figure 1 - 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 1/17/2014



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: Selected site is WITHIN the FEMA 100-year floodplain.

Flood Zone: A

Advisory Flood Height: About 807 feet

Water Depth: About 9.96 feet (Source: HEC_RAS)

Elevation: About 798 feet

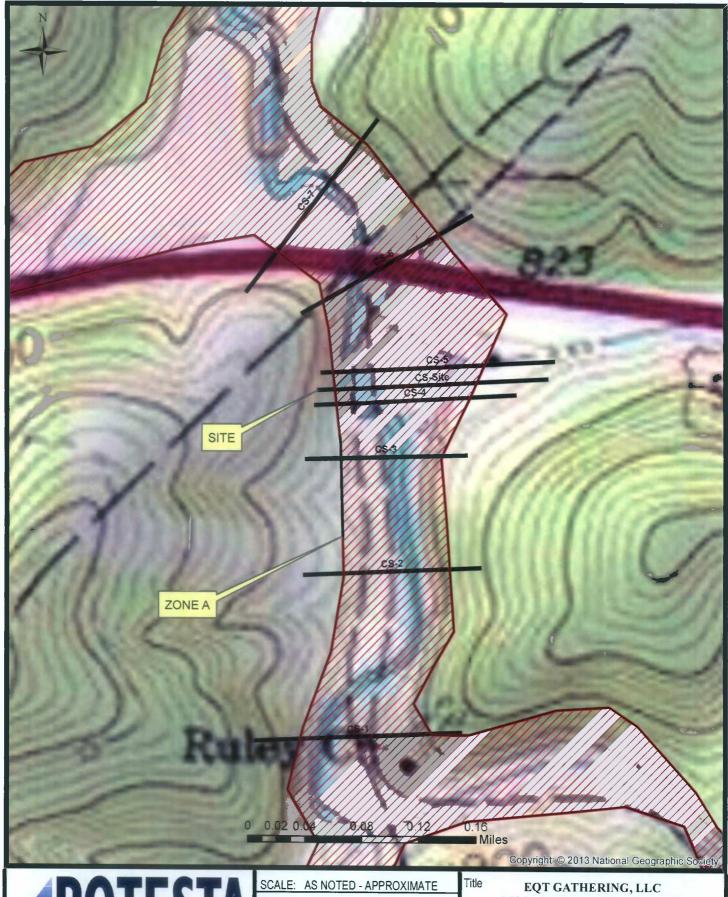
Location (long, lat): 80.812103 W, 39.276370 N

Location (UTM 17N): (516207, 4347463) **FEMA Issued Flood Map:** 54017C0120C

Contacts: Doddridge County

CRS Information: No CRS information available

Flood Profile: No Profile HEC-RAS Model: No Model



POTESTA

ENGINEERS AND ENVIRONMENTAL CONSULTANTS

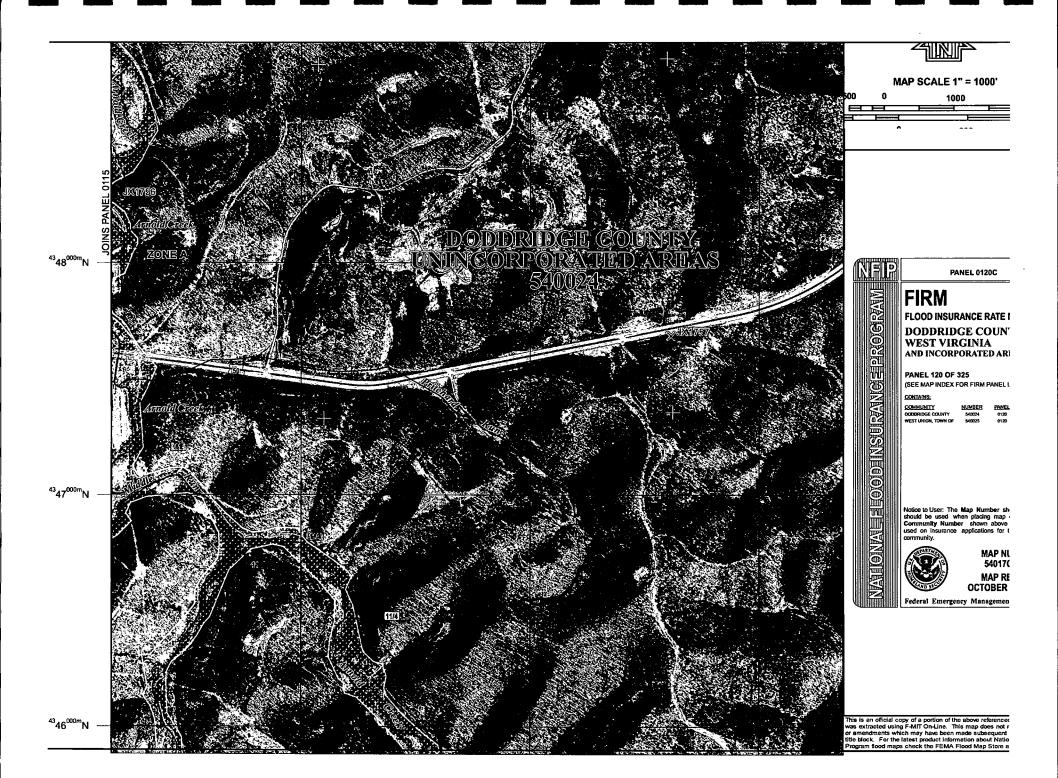
DATE: JANUARY 2014

PROJECT NO.: 13-0456-001

DRAWN: JMS

EQT GATHERING, LLC
MOSA SO15 GATHERING LINE
TIMBER MAT CROSSING
FIGURE 2
HYDRAULIC ANALYSIS
DOGGRIDGE CO., WEST VIRGINIA

APPENDIX B



APPENDIX C



2300 MacCorkle Avenue, SE Charleston, WV 25304

Phone: (304) 342-1400 Fax: (304) 343-9031 Project Name: EQT MOSA SO15 Gathering Line – Timber Mat Crossing
Project No.: 0101-13-0456-001 Sheet No. of ______

Calculated By: J. Smith Date: 1/14/2014

Checked By: J. Schloeter Date:
Subject: Hydrologic Calculations Scale: N/A

The purpose of these calculations is to estimate the peak runoff for the 1% annual storm event (also referred to as the "100-year flood") for the proposed EQT Big 176 Bridge project located along North Fork of Fishing Creek in Mobley, Wetzel County, West Virginia.

Method - USGS Regression Equation Method

The regression equation, as outlined in the United States Geological Survey (USGS) report entitled Estimating Magnitude and Frequency of Peak Discharges in Rural, Unregulated, Streams in West Virginia, (2000) (U.S. Department of the Interior, 2000) was the first method considered to compute the one-percent annual flow rate for the project site. This method of computing flood discharges is the same used for the many of the streams modeled in the FEMA Flood Insurance Studies in West Virginia. As shown below, the standard one-percent annual peak flow rate computed using this method was 2,418 cubic feet per second (cfs).

Drainage Area = 11.77 mi²

	Discharge (ft ³ /s) for South Region					
Recurrence Interval, (i)	Q _i (cfs)	Q _i + 1SE (cfs)	Q _i + 2SE (cfs)			
2-yr	822	1,045	1,867			
5-yr	1,325	1,677	3,002			
10-yr	1,706	2,161	3,867			
25-yr	2,237	2,855	5,092			
50-yr	2,666	3,426	6,092			
100-yr	3,123	4,051	7,174			
200-yr	3,602	4,722	8,324			
500-yr	4,284	5,706	9,990			

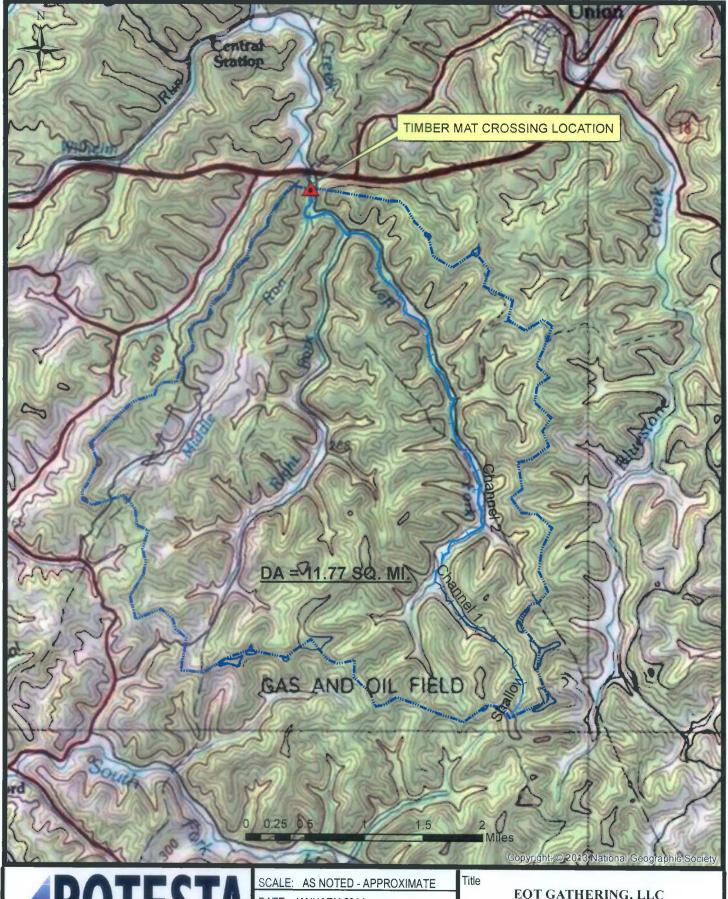
Key: Q = Discharge (cfs)

1SE = Standard Error of Estimate 2SE = 2 Standard Errors of Estimate

Notes:

- 1) There is also a negative standard error associated with the mean curves. Only positive values are shown.
- 2) Reference: Estimating Magnitude and Frequency of Peak Discharges for Rural, Unregulated, Streams in West Virginia, U.S. Geological Survey, In cooperation with the West Virginia Department of Transportation Division of Highways. Water-Resources Investigation Report 00-4080
- 3) These estimates are for unregulated, virtually natural streams in West Virginia. This method is applicable for peak discharges for drainage areas between 0.10 and 8,371 square miles.

The peak discharge computed using USGA Regression Equation is 3,123 cfs and will be considered in the hydraulic model



POTESTA

ENGINEERS AND ENVIRONMENTAL CONSULTANTS

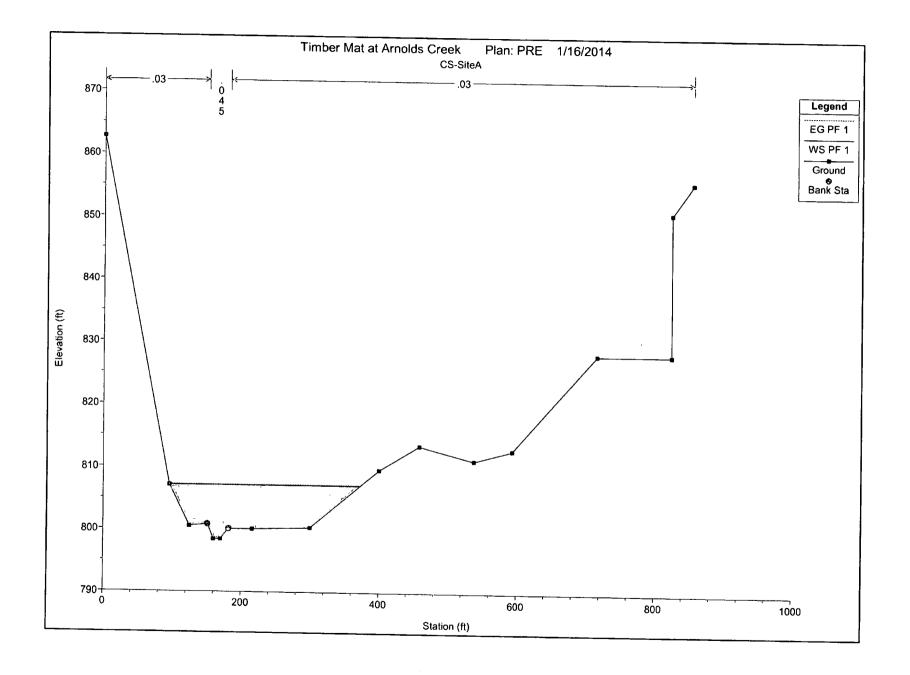
DATE: JANUARY 2014

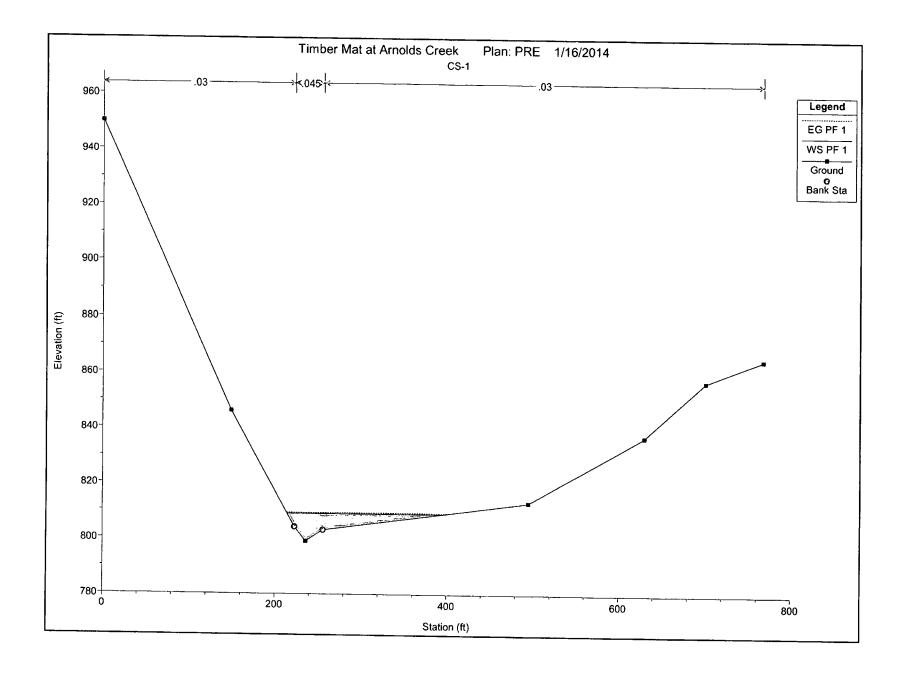
PROJECT NO.: 13-0456-001

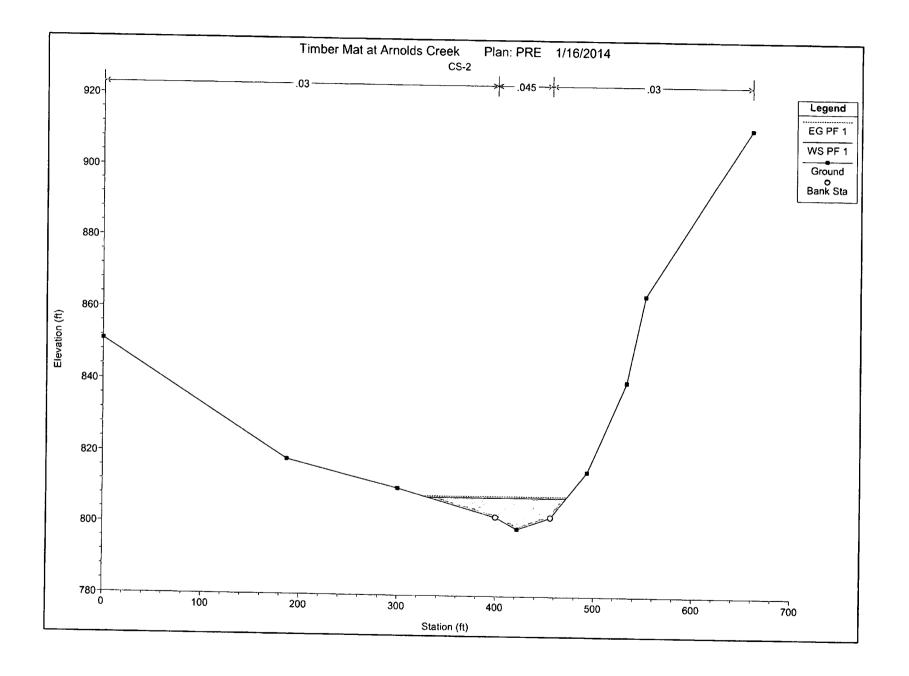
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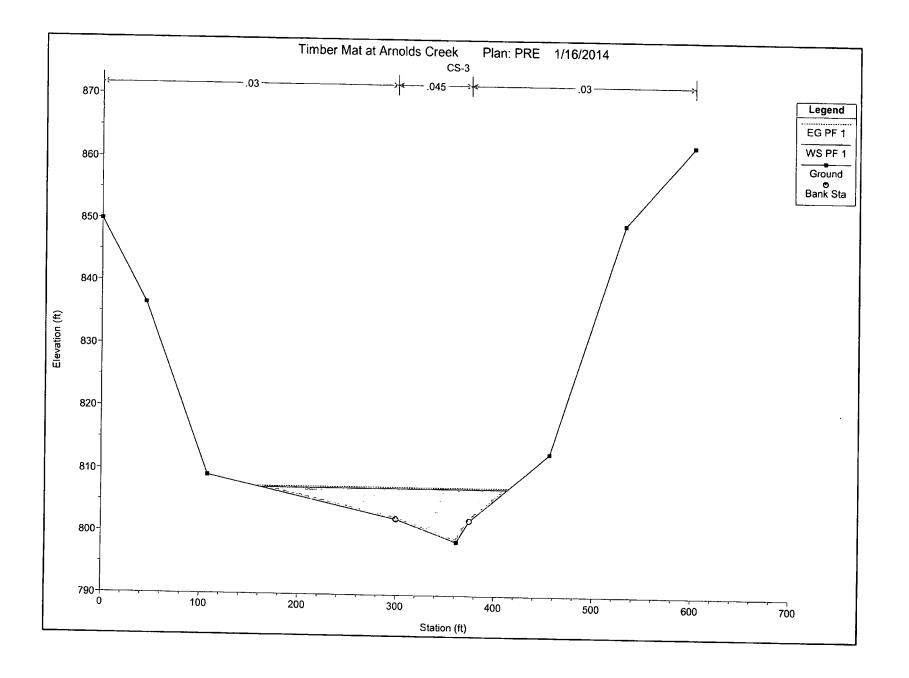
EQT GATHERING, LLC MOSA SO15 GATHERING LINE DRAINAGE MAP DOGGRIDGE CO., WEST VIRGINIA APPENDIX D

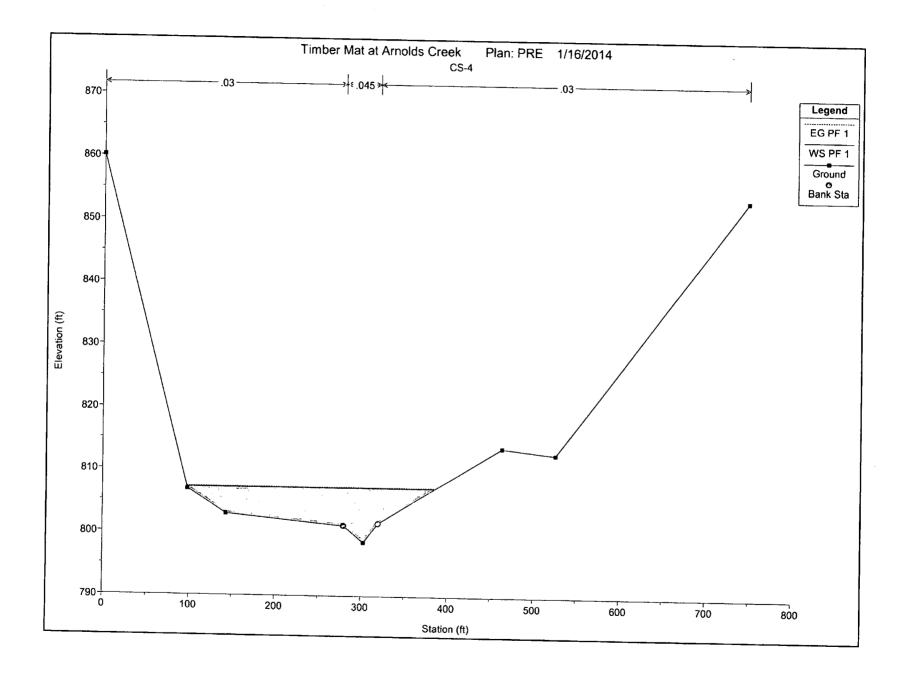
Pre-Construction Cross Sections

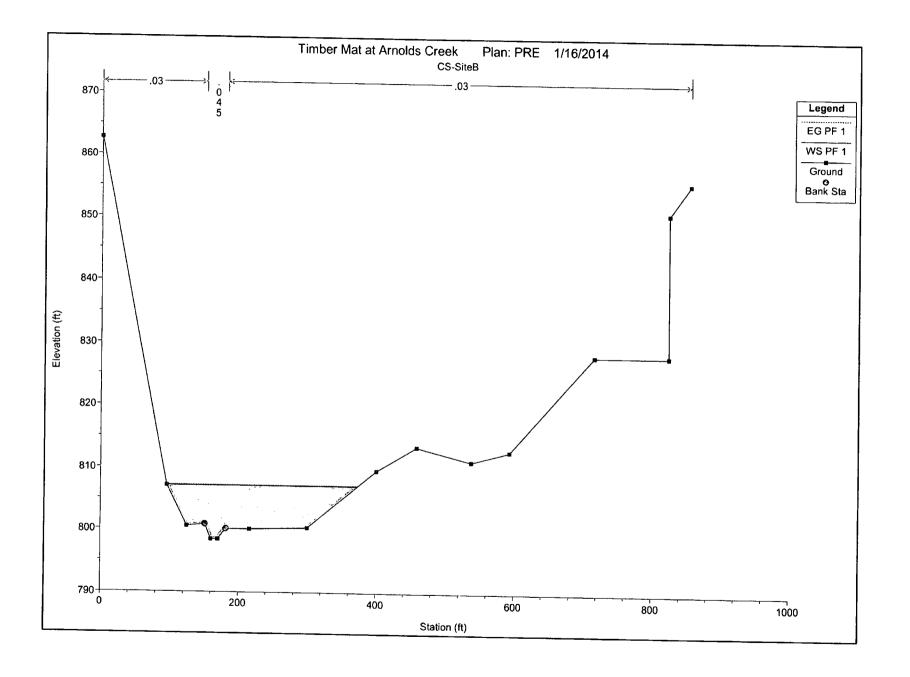


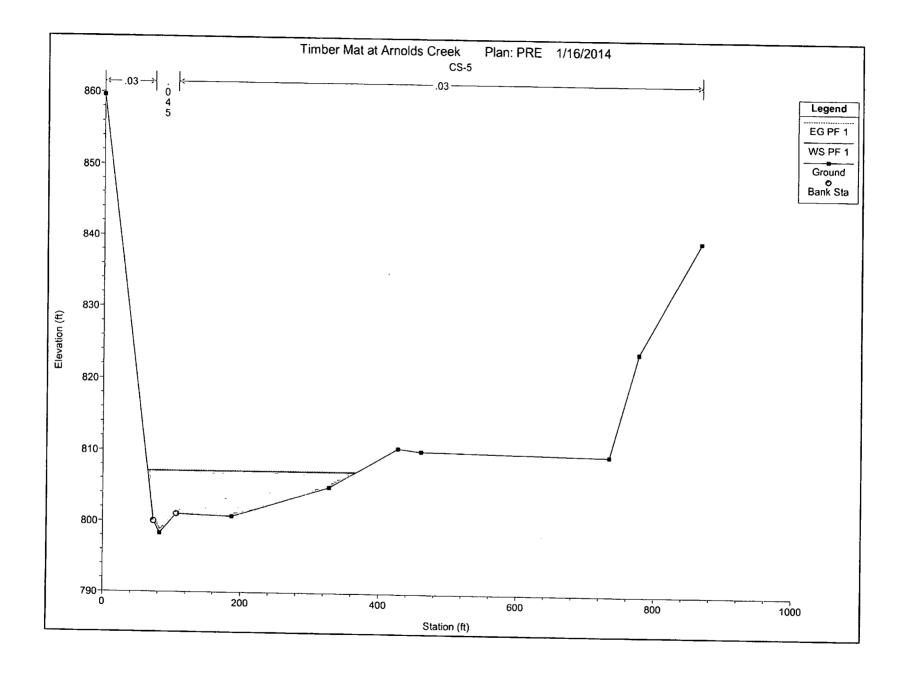


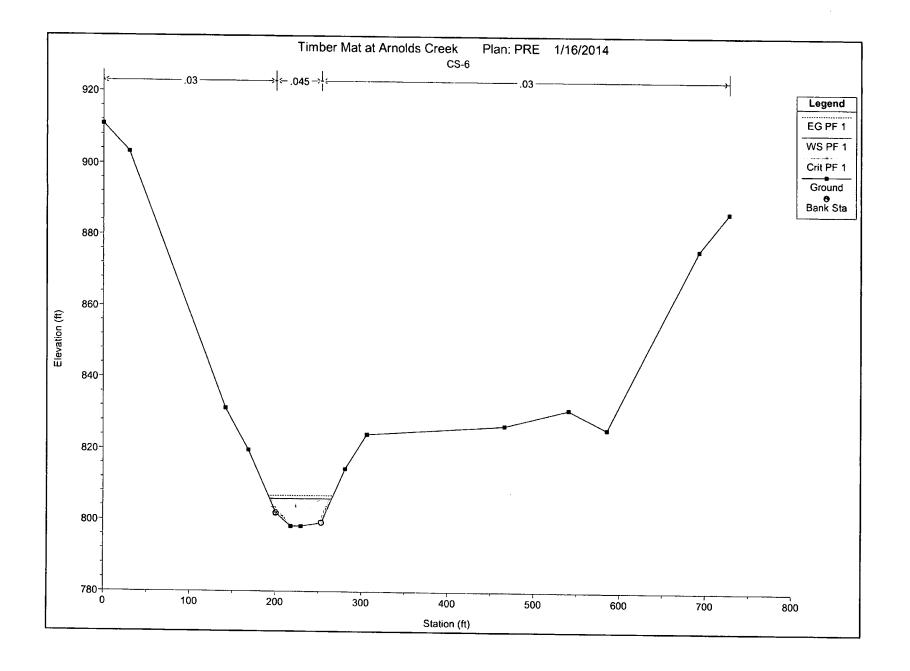


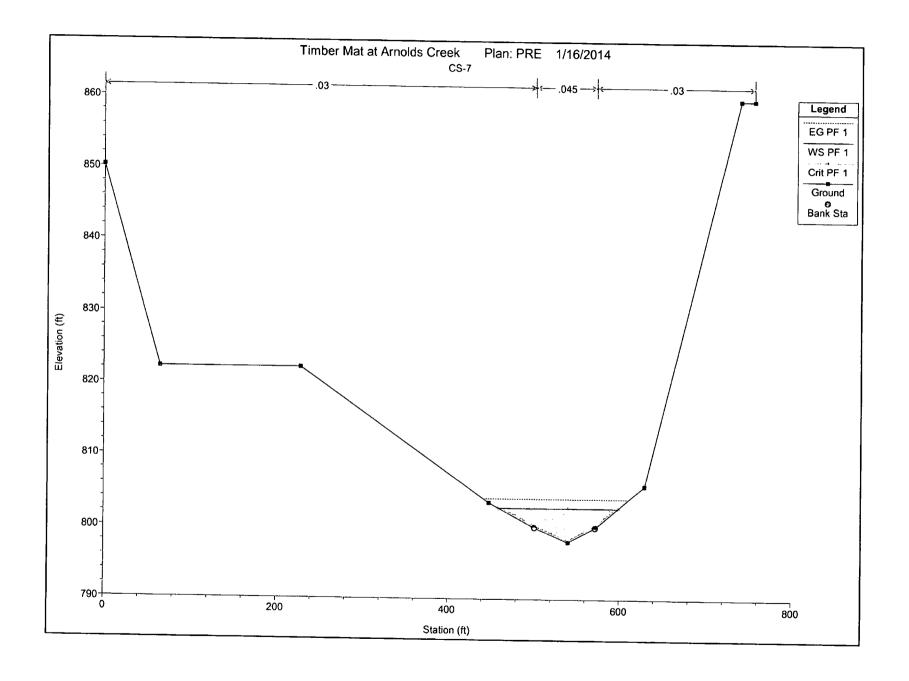




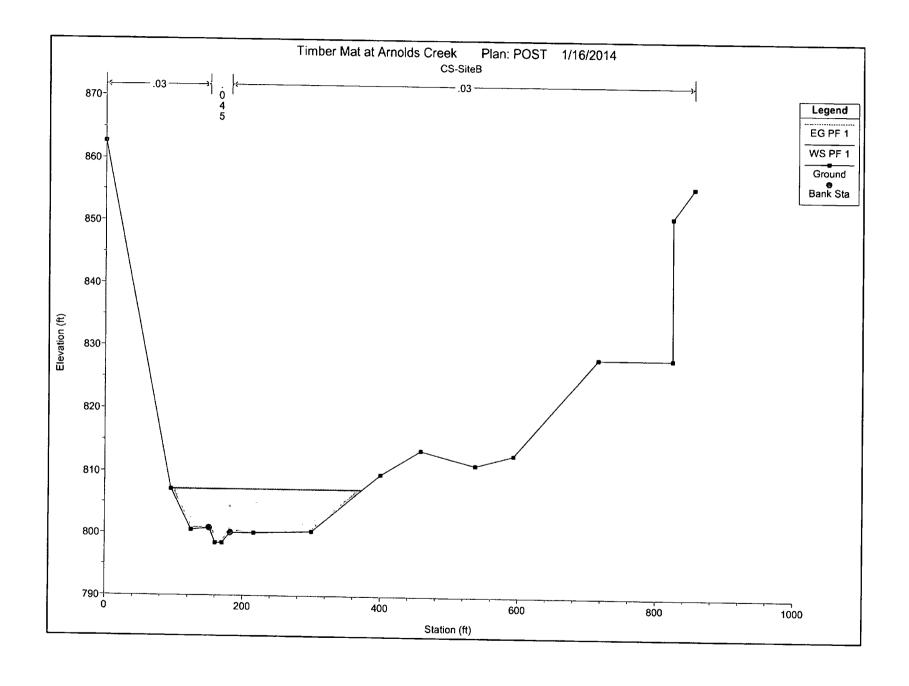


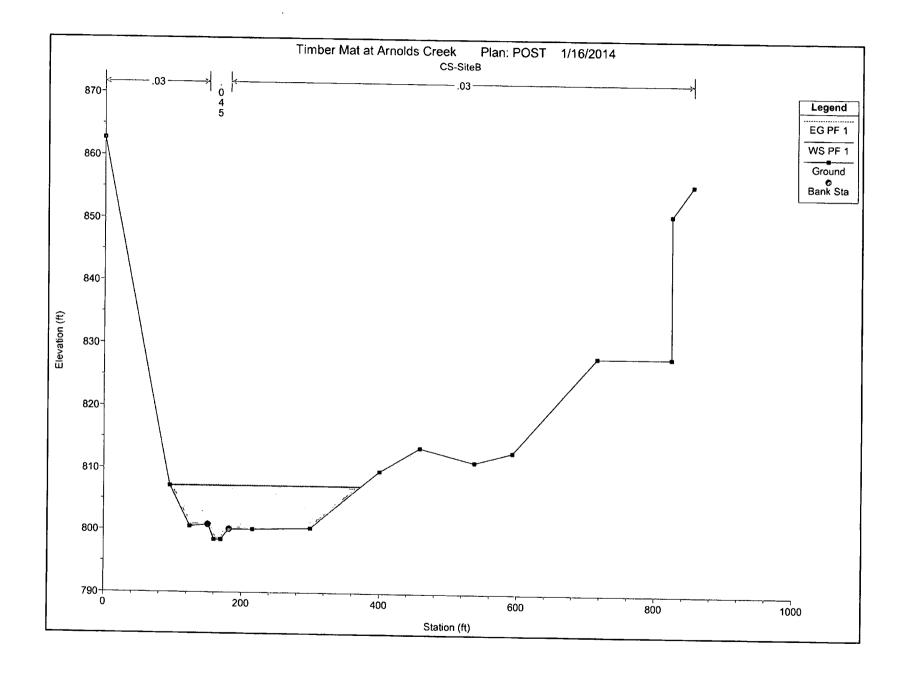


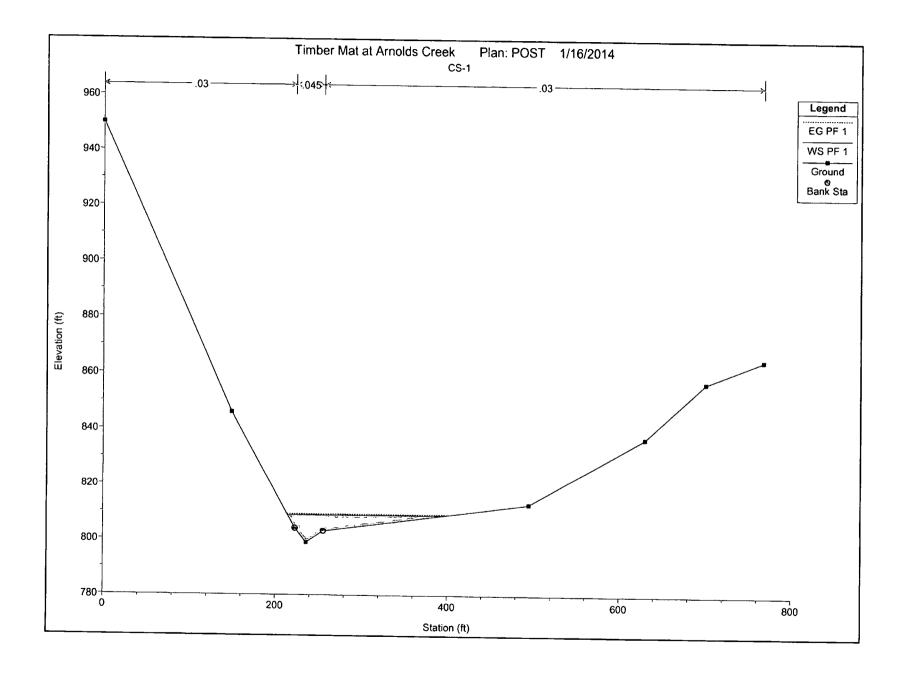


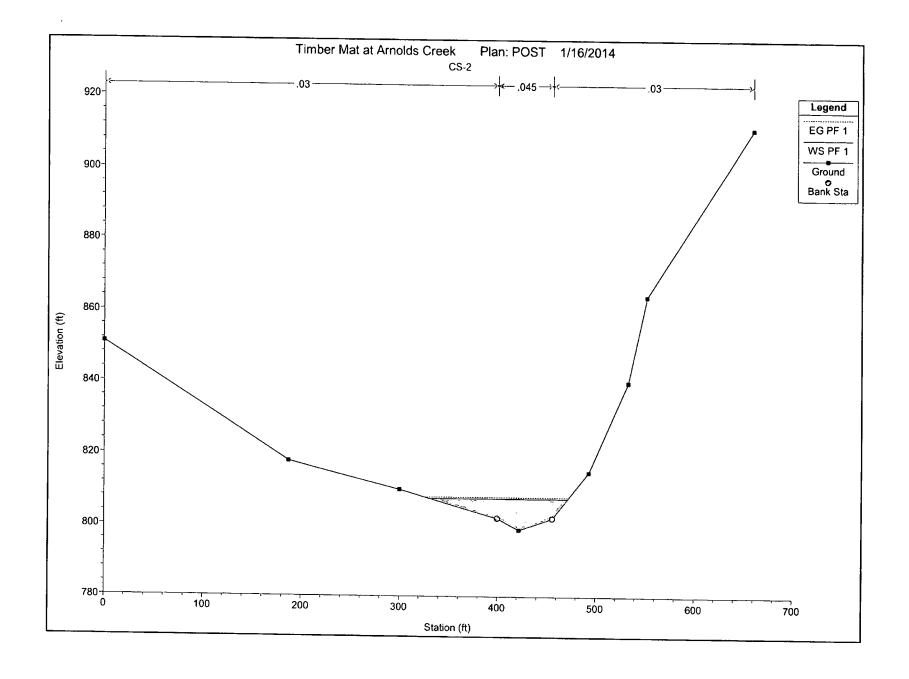


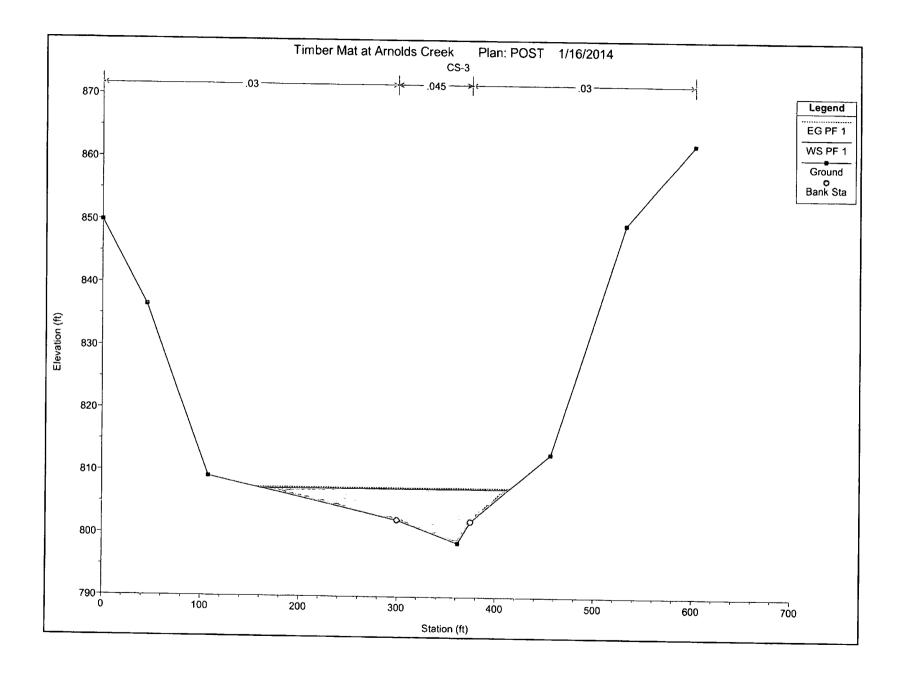
Post-Construction Cross Sections

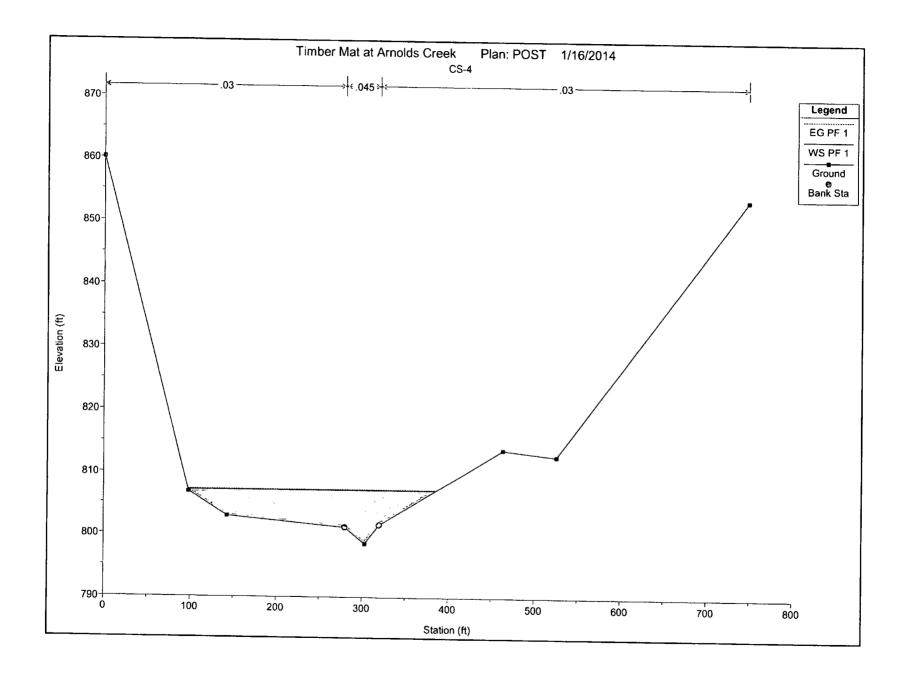


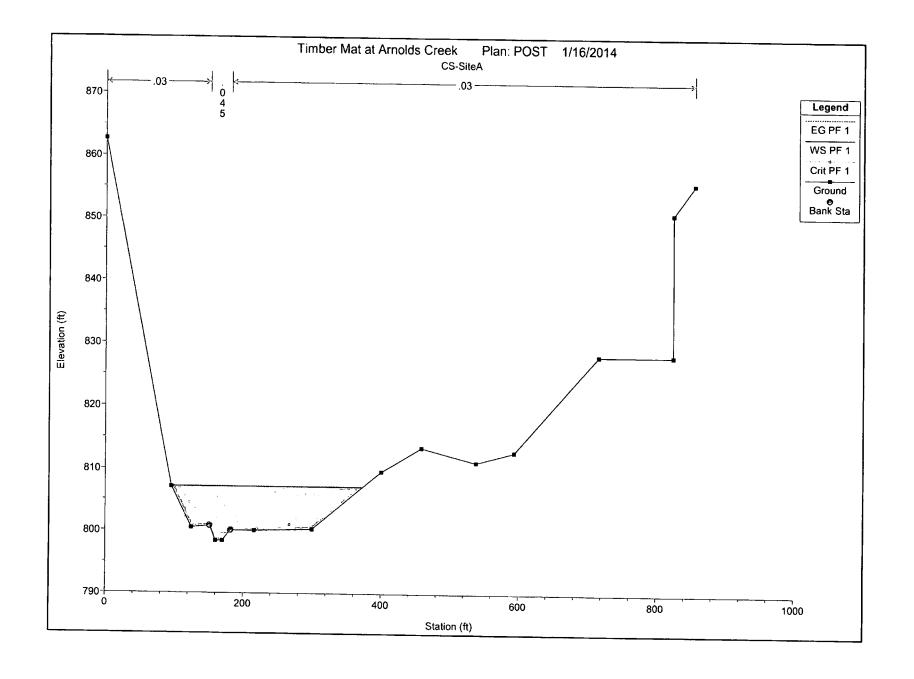


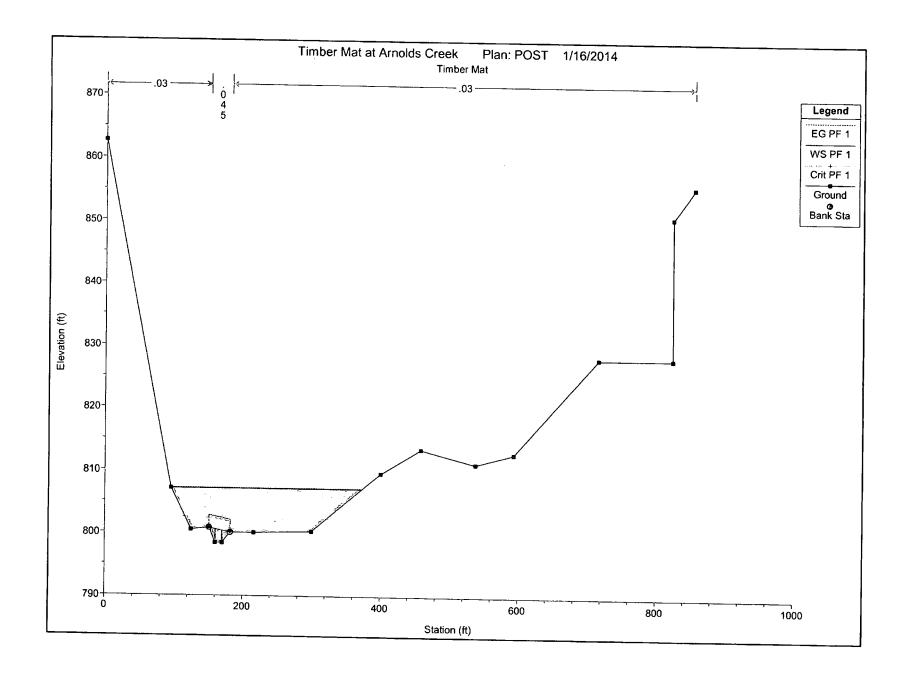


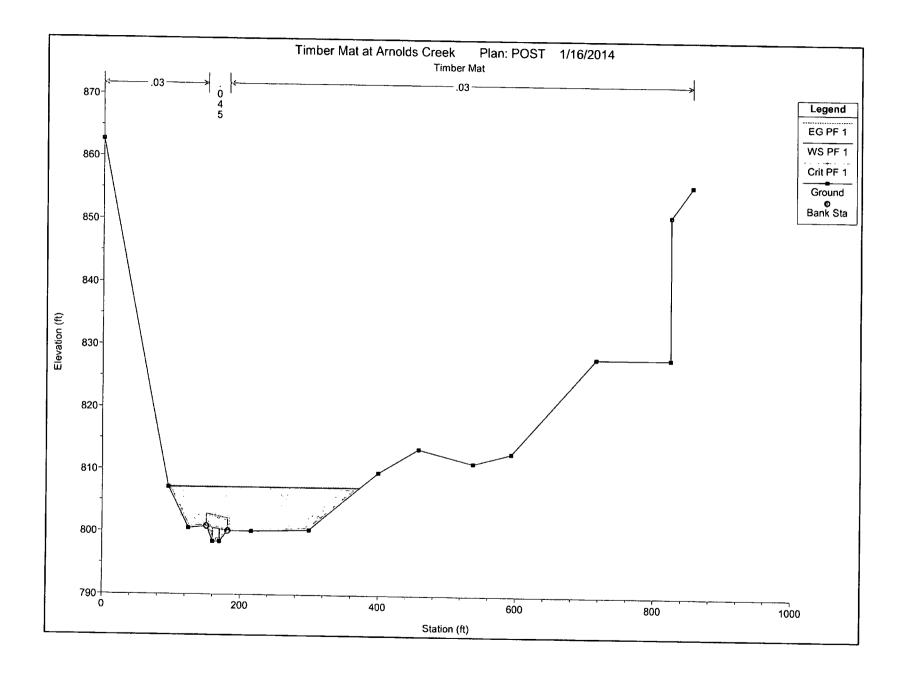


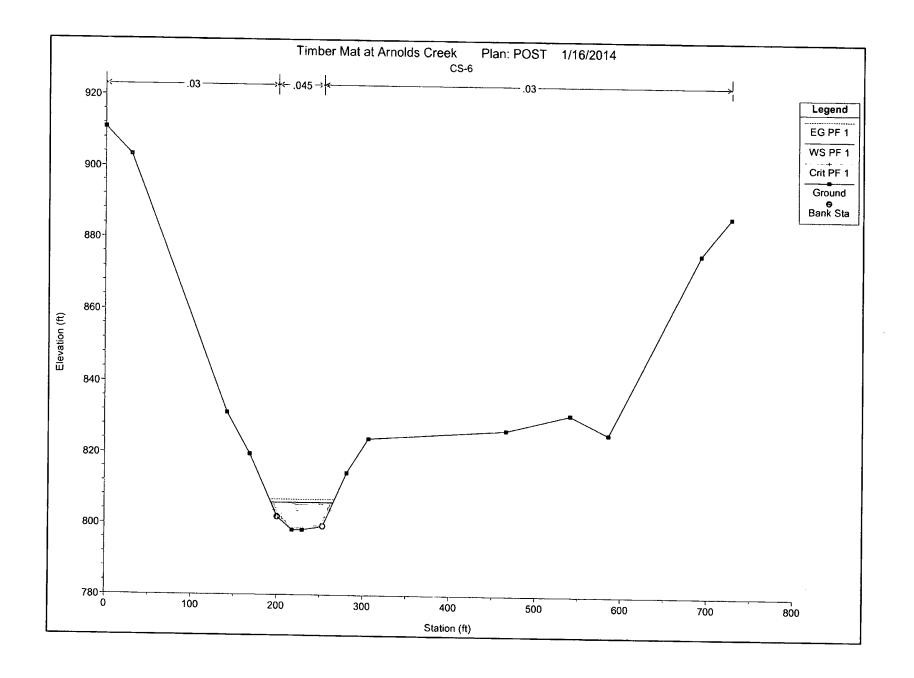


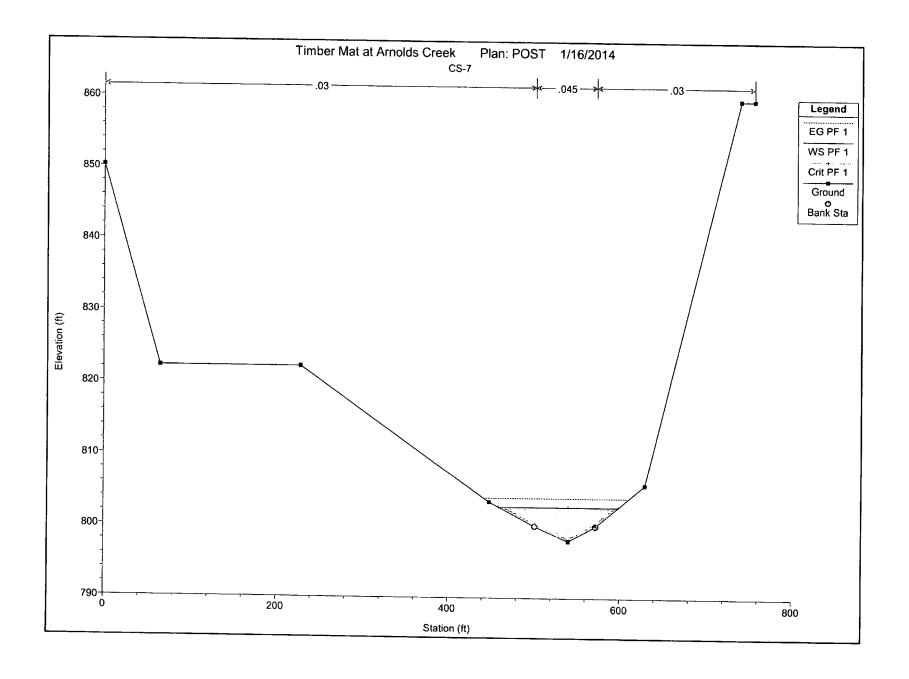












APPENDIX E

TABLE 1

COMPARISON OF 100-YEAR FLOOD ELEVATIONS

Cross Section ¹	Minimum Channel Elevation (Feet)	Existing Conditions Model ² (Feet)	Proposed Conditions Model ³ (Feet)	Increase (Feet)	
04	798.0	802.69	802.69	0.00	
720	798.2	805.89	805.89	0.00	
1,135	798.3	807.07	807.07	0.00	
1,315 ⁵	798.4	807.10	807.10	0.00	
1,360 ⁵	798.4	807.11	807.11	0.00	
1,509	798.5	807.12	807.13	0.01	
1,579	798.6	807.18	807.18	0.00	
1,899	798.7	807.57	807.58	0.01	
2,294	798.9	808.89	808.90	0.01	

Cross section stationing corresponds to stream centerline stationing in feet as modeled in the POTESTA HEC-RAS model.

The Existing Conditions Model considers the site prior to installation of the proposed temporary timber mat.

The Proposed Conditions Model considers the site after installation of the proposed temporary timber mat.

POTESTA stationing assumes that the beginning cross section is located at station 0. (Example: Cross section 1,938 is located 938 feet upstream of the beginning of the model).

Bridge location is between cross sections 1360 and 1315 (approximately station 1335).

APPENDIX F

HEC-RAS Version 4.0.0 March 2008 U.S. Army Corps of Engineers Hydrologic Engineering Center 609 Second Street Davis, California

X	X XXX	XXX	XXXX	XXXX	XX	XXXX	
X	X X	X X	X X	X X X			
X	XX	X	X X	X X X			
XX	XXXXX	XXXX	X = X	XX XXX	X XX	XXXX	XXXX
X	X X	X	XX	XX	X		
X	X X	X X	X X	$\mathbf{X} \mathbf{X}$	X		
\mathbf{X}	X XXX	XXX	XXXX	X X X	\mathbf{X}	XXXX	

PROJECT DATA

Project Title: Timber Mat at Arnolds Creek

Project File: TimberMatatArnol.prj

Run Date and Time: 1/16/2014 1:47:18 PM

Project in English units

PLAN DATA

Plan Title: POST

Plan File: v:\JMSmith\HEC Data\RAS\13-0456-001\TimberMatatArnol.p01

Geometry Title: Post

Geometry File: v:\JMSmith\HEC Data\RAS\13-0456-001\TimberMatatArnol.g02

Flow Title: Flow 01

Flow File : v:\JMSmith\HEC Data\RAS\13-0456-001\TimberMatatArnol.f01

Plan Summary Information:

Number of: Cross Sections = 9 Multiple Openings = 0

= 0 Inline Structures = 0 Culverts Bridges Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01

Critical depth calculation tolerance = 0.01

Maximum number of iterations = 20

Maximum difference tolerance = 0.3

Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary

Conveyance Calculation Method: At breaks in n values only

Friction Slope Method: Average Conveyance

Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: Flow 01

Flow File: v:\JMSmith\HEC Data\RAS\13-0456-001\TimberMatatArnol.f01

Flow Data (cfs)

River Reach RS PF 1

Arnolds Creek Reach 1 2294 3123

Boundary Conditions

River Reach Profile Upstream Downstream

Arnolds Creek Reach 1 PF 1 Normal S = 0.67 Normal S = 0.67

GEOMETRY DATA

Geometry Title: Post

CROSS SECTION

RIVER: Arnolds Creek

REACH: Reach 1 RS: 2294

INPUT

Description: CS-1

Station Elevation Data num= 9

 Sta
 Elev
 Sta
 Elev
 Sta
 Elev
 Sta
 Elev
 Sta
 Elev

 0
 950
 149
 846
 223
 804
 236
 798.9
 256
 803

495 813 630 837 701 857 768 865

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val

0 .03 223 .045 256 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

223 256 718 720 722 .1 .3

CROSS SECTION

RIVER: Arnolds Creek

REACH: Reach 1 RS: 1899

INPUT

Description: CS-2

CS-2

Station Elevation Data num= 10

 Sta
 Elev
 St

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 400 .045 456 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. 400 456 414.99 414.99 11.3

CROSS SECTION

RIVER: Arnolds Creek

REACH: Reach 1 RS: 1579

INPUT

Description: CS-3

Station Elevation Data num= 9

 Sta
 Elev
 Sta
 Elev
 Sta
 Elev
 Sta
 Elev

 0
 849.9
 45
 836.5
 107.8
 809.1
 300
 802.2
 362
 798.6

375 802.02 456.3 812.8 532.6 849.5 602.8 862.2

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 300 .045 375 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. 300 375 198 200 202 .1 .3

RIVER: Arnolds Creek

REACH: Reach 1 RS: 1509

INPUT

Description: CS-4

Station Elevation Data num= 9

Sta Elev Sta Elev Sta Elev Sta Elev

0 860.1 98.3 806.8 143 802.9 280 801.1 303 798.5

320 801.5 463.7 813.7 525.9 812.7 749 853.5

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val

0 .03 280 .045 320 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

280 320 144 149 151 .1 .3

RIVER: Arnolds Creek

REACH: Reach 1 RS: 1360

INPUT

Description: CS-SiteA

Station Elevation Data num= 17

 Sta
 Elev
 Sta
 Elev
 Sta
 Elev
 Sta
 Elev
 Sta
 Elev

 0
 862.7
 95.8
 807.1
 124.9
 800.5
 151.5
 800.8
 160
 798.4

 170
 798.4
 182
 800.07
 216
 800.07
 300
 800.3
 400
 809.6

 458.6
 813.5
 537.8
 811.2
 593.4
 812.8
 716.2
 828.1
 824.8
 828.1

 824.8
 850.8
 855.7
 855.6

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 151.5 .045 182 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. 151.5 182 45 45 45 .1 .3

•

BRIDGE

RIVER: Arnolds Creek
REACH: Reach 1 RS: 1335
INPUT

Description: Timber Mat
Distance from Upstream XS = 25
Deck/Roadway Width = 15
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
151.5 802.8 800.8 182 802.07 800.07

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 151.5 .045 182 .03

Bank Sta: Left Right Coeff Contr. Expan. 151.5 182 .1 .3

Downstream Deck/Roadway Coordinates

```
num=
  Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 151.5 802.8 800.8 182 802.07 800.07
Downstream Bridge Cross Section Data
Station Elevation Data num= 17
  Sta Elev Sta Elev Sta Elev
                                    Sta Elev
   0 862.7 95.8 807.1 124.9 800.5 151.5 800.8
                                                   160 798.4
  170 798.4
             182 800.07 216 800.07
                                        300 800.3
                                                    400 809.6
 458.6 813.5 537.8 811.2 593.4 812.8 716.2 828.1 824.8 828.1
 824.8 850.8 855.7 855.6
Manning's n Values
                     num=
  Sta n Val Sta n Val Sta n Val
   0 .03 151.5 .045 182
                              .03
Bank Sta: Left Right Coeff Contr. Expan.
     151.5 182
                           .3
                      .1
Upstream Embankment side slope
                                         2 horiz, to 1.0 vertical
Downstream Embankment side slope
                                           2 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins
Energy head used in spillway design
                                    =
Spillway height used in design
Weir crest shape
                            = Broad Crested
Number of Piers = 2
Pier Data
Pier Station Upstream=
                        160 Downstream=
```

```
Upstream num= 2
Width Elev Width Elev
1 798.4 1 800.8
Downstream num= 2
Width Elev Width Elev
1 798.4 1 800.8
```

Pier Data
Pier Station Upstream= 170 Downstream= 170
Upstream num= 2
Width Elev Width Elev
1 798.4 1 800.8
Downstream num= 2
Width Elev Width Elev
1 798.4 1 800.8

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data Energy Selected Low Flow Methods = Highest Energy Answer

High Flow Method Energy Only

Additional Bridge Parameters

Add Friction component to Momentum

Do not add Weight component to Momentum

Class B flow critical depth computations use critical depth

inside the bridge at the upstream end

Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #PF 1

E.G. US. (ft)	807.17	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	807.11	E.G. Elev (ft)	807.17	807.16
Q Total (cfs)	3123.00	W.S. Elev (ft)	807.09	807.09
Q Bridge (cfs)	12.51	Crit W.S. (ft)	802.53	802.53
Q Weir (cfs)	M	fax Chl Dpth (ft)	8.69	8.69
Weir Sta Lft (ft)	V	el Total (ft/s)	2.06 2	.06
Weir Sta Rgt (ft)	F	Flow Area (sq ft)	1514.04	1513.09
Weir Submerg		Froude # Chl	0.12	0.12
Weir Max Depth (ft)		Specif Force (cu	ft) 4992.26	4987.22
Min El Weir Flow (ft)	800.	08 Hydr Depth (1	ft) 5.46	5.46
Min El Prs (ft)	800.80	W.P. Total (ft)	347.80	347.75
Delta EG (ft)	0.01	Conv. Total (cfs)	210537.8	210344.9
Delta WS (ft)	0.02	Top Width (ft)	277.21	277.15
BR Open Area (sq ft)	37.7	75 Fretn Loss (ft)	0.00	0.00
BR Open Vel (ft/s)	0.33	C & E Loss (ft)	0.00	0.00
Coef of Q	Sh	ear Total (lb/sq ft)	0.06	0.06
Br Sel Method	Energy or	nly Power Total (lb/ft s) 0.1	2 0.12

RIVER: Arnolds Creek

REACH: Reach 1 RS: 1315

INPUT

Description: CS-SiteB

Station Elevation Data num= 17

Sta Elev Sta Elev Sta Elev Sta Elev

0 862.7 95.8 807.1 124.9 800.5 151.5 800.8 160 798.4

170 798.4 182 800.07 216 800.07 300 800.3 400 809.6

458.6 813.5 537.8 811.2 593.4 812.8 716.2 828.1 824.8 828.1

824.8 850.8 855.7 855.6

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val

0 .03 151.5 .045 182 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

151.5 182 45 45 45 .1 .3

RIVER: Arnolds Creek

REACH: Reach 1 RS: 1135

INPUT

Description: CS-5

Station Elevation Data num= 11

Sta Elev Sta Elev Sta Elev Sta Elev

0 859.6 73.4 800 82.4 798.3 106.8 801 186.8 800.7

327.9 804.9 427.4 810.5 461.2 810.1 735.2 809.6 777.7 823.9

867.8 839.5

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val

0 .03 73.4 .045 106.8 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

73.4 106.8 405 415 425 .1 .3

RIVER: Arnolds Creek

REACH: Reach 1 RS: 720

INPUT

Description: CS-6

Station Elevation Data num= 15

Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev 0 910.93 30 903.2 141.8 831.3 168.4 819.6 200.5 801.9 217.9 798.2 229.6 798.2 253.5 799.2 281.02 814.34 306.3 824.1

466.3 826.6 540.98 831.03 585.6 825.6 692.8 875.8 727.7 886.3

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .03 200.5 .045 253.5 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan. 200.5 253.5 390 395 400 .1 .3

RIVER: Arnolds Creek

REACH: Reach 1 RS: 0

INPUT

Description: CS-7

Station Elevation Data num= 10

Sta Elev Sta Elev Sta Elev Sta Elev

0 850.2 65.1 822.2 228.1 822.2 448.2 803.4 501.3 800 540.4 798 572.1 800 629.3 805.8 739.9 859.7 755.9 859.7

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val

0 .03 501.3 .045 572.1 .03

Bank Sta: Left Right Coeff Contr. Expan.

501.3 572.1 .1 .3

SUMMARY OF MANNING'S N VALUES

River:Arnolds Creek

Reach	River Sta.	n1	n2	n3
Reach 1	2294	.03	.045	.03
Reach 1	1899	.03	.045	.03
Reach 1	1579	.03	.045	.03
Reach 1	1509	.03	.045	.03
Reach 1	1360	.03	.045	.03
Reach 1	1335	Bridge		
Reach 1	1315	.03	.045	.03
Reach 1	1135	.03	.045	.03
Reach 1	720	.03	.045	.03
Reach 1	0	.03	.045	.03

SUMMARY OF REACH LENGTHS

River: Arnolds Creek

Reach	River Sta.	Left	Channel	Right
Reach 1	2294	718	720	722
Reach 1	1899	414.99	414.99	414.99
Reach 1	1579	198	200	202
Reach 1	1509	144	149	151
Reach 1	1360	45	45	45
Reach 1	1335	Bridge		
Reach 1	1315	45	45	45
Reach 1	1135	405	415	425
Reach 1	720	390	395	400
Reach 1	0			

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Arnolds Creek

Reach	River Sta	ı. Cont	r. Ex	pan.
Reach 1	2294	.1	.3	
Reach 1	1899	.1	.3	
Reach 1	1579	.1	.3	
Reach 1	1509	.1	.3	
Reach 1	1360	.1	.3	
Reach 1	1335	Bridge		
Reach 1	1315	.1	.3	
Reach 1	1135	.1	.3	
Reach 1	720	.1	.3	
Reach 1	0	.1	.3	