

# **WEST VIRGINIA WATER SYSTEM EVALUATION TOOL ASSISTANCE St. Albans and Beckley Districts**

**Buyer: Roberta Wagner  
2019 Washington Street, East  
Charleston, WV 25305-0130**

**RFQ#: EHS11030  
Opening Date: April 28, 2011  
Opening Time: 1:30 PM**

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WV PURCHASING  
DIVISION

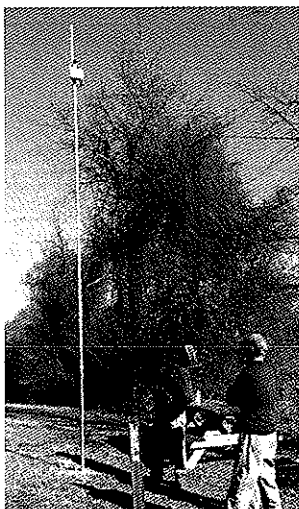
Submitted by:

**ORIGINAL**



**TETRA TECH**

Tetra Tech, Inc.,  
803 Quarrier Street, Suite 400, Charleston, WV 25301  
Phone 304.414.0054; Fax 304.720.2334





**TETRA TECH**

Jon C. Ludwig  
Director

April 28, 2011

Ms. Roberta Wagner  
Department of Administration  
Purchasing Division  
Building 15  
2019 Washington Street, East  
Charleston, WV 253056-0130

**Title: RFQ EHS11030 West Virginia Water System Evaluation Tool Assistance in St. Albans and Beckley Districts**

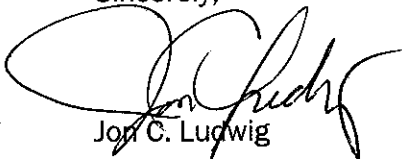
Dear Ms. Wagner:

Tetra Tech, Inc. is pleased to submit our qualifications and cost quotation for EHS11030 to provide on-site assistance with the WWSET Assessments in the St. Albans and Beckley Districts.

Currently, Tetra Tech provides Source Water Protection Plan support in the Beckley, Philippi and Kearneysville Districts for more than 100 Community Water Systems, and also assists in tracking progress for the American Recovery and Reinvestment Act and State Revolving Fund projects. We trust that our performance completing these projects demonstrates our desire to provide meaningful information and strategies to assist in your continual endeavor to provide safe drinking water and protect public health throughout West Virginia. We believe our experience gained from carrying out these projects with the WV Department of Health and Human Resources makes us uniquely qualified to complete the capacity development assessments throughout the Beckley and St. Albans Districts.

We appreciate the opportunity to present our qualifications and cost quotation, and we look forward to providing support for this project. Please feel free to contact me at 304-414-0054, if you have any questions or to discuss this matter further.

Sincerely,



Jon C. Ludwig

**Tetra Tech, Inc.**

803 Quarrier Street, Suite 400  
Charleston, WV 25301

Tel 304.414.0054 Fax 304.720.2334 [www.tetrattech.com](http://www.tetrattech.com)

### EHS 11030-Bid Price Sheet

Deliverables (Includes all requirements as described in specifications)	Deliverable Due Date	Annual Usage #	Unit Bid Price Per Deliverable (Cost to provide one per deliverable)	Bid Price (Annual Usage #) X Unit Bid Price
<p><b>Deliverable #1:</b> One-day Initial Project Plan meeting with OEHS leadership at 350 Capitol Street, Charleston, WV during the first month of the contract followed by final project plan to OEHS for approval within 45 days of contract effective date. Vendor will be responsible for its employees' transportation, lodging, food, and incidental expenses incurred.</p>	Year 1- Months 1-2	1	\$ 8,412.00	\$ 8,412.00
<p><b>Deliverable #2:</b> CWSs contacted that choose <u>not</u> to participate in the WWSSET program.</p>	Year 1- Months 2-11	Estimated Annual Usage # <sup>1</sup> 20	\$ 132.50	\$ 2,650.00
<p><b>Deliverable #3:</b> Schedule, conduct, and complete reviews of Community Water Systems (CWSs) that agree to participate in the WWSSET program located in the following OEHS District Office areas</p>	<b>Deliverable Due Date</b>	<b>Estimated Annual Usage # per OEHS District Office Coverage Area<sup>2</sup></b>		
<p><b>Beckley District Office Area</b></p>	Year 1- Months 2-12	30	\$ 1,030.00	\$ 30,900.00
	Year 2- Months 1-12	41	\$ 1,052.00	\$ 43,132.00
	Year 3- Months 1-12	35	\$ 1,075.00	\$ 37,625.00
<p><b>St. Albans District Office Area</b></p>	Year 1- Months 2-12	22	\$ 1,029.00	\$ 22,638.00
	Year 2- Months 1-12	30	\$ 1,051.00	\$ 31,530.00
	Year 3- Months 1-12	26	\$ 1,074.00	\$ 27,924.00
<p><b>Deliverable #4:</b> Written electronic Microsoft Word based report that includes details of all reviews completed during the contract year.</p>	Year 1- Month 12	1	\$ 3,059.00	\$ 3,059.00
	Year 2- Month 12	1	\$ 3,136.00	\$ 3,136.00
	Year 3- Month 12	1	\$ 3,214.00	\$ 3,214.00
<b>Total Bid Price</b>				<b>\$ 214,220.00</b>

<sup>1</sup> Estimated Annual # of CWSs contacted in the Beckley and St. Albans District Office areas that choose not to participate in the WWSET program is unknown. Bidders "Unit Bid Price" per this Deliverable #3 will be the final unit cost charged to OEHS whether CWS is located in Beckley or St. Albans District Office area for the entire term of the contract.

<sup>2</sup> Estimated Annual # of CWSs that choose to participate in the WWSET program per OEHS District Office area is unknown. Bidders "Unit Bid Price" per this Deliverable #4 will be the final unit cost charged to OEHS for each CWS review completed within the respective district office for the entire term of the contract. Bidders must complete the Unit Bid Price and Total Bid for each Deliverable (separate bids per district office area as indicated under Deliverable #4).

Bidders must complete, sign, and date the vendor section below:

**Vendor Name:** Tetra Tech, Inc.      **Phone:** 304-414-0054 extension 101  
**Contact Person:** Jon C. Ludwig (jon.ludwig@tetratech.com)      **Fax:** 304-720-2334

**Authorized Representative:** John P. Craig, Vice President      **Email:** john.craig@tetratech.com

**Authorized Representative Signature:**       **Date:** April 27, 2011



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**Request for  
 Quotation**

RFQ NUMBER  
**EHS11030**

PAGE  
**1**

ADDRESS CORRESPONDENCE TO ATTENTION OF  
**ROBERTA WAGNER  
 304-558-0067**

RFQ COPY  
 TYPE NAME/ADDRESS HERE

VENDOR

SHIP TO

**HEALTH AND HUMAN RESOURCES**

**BPH ENVIRO HLTH SERVICES  
 350 CAPITOL STREET, ROOM 313  
 CHARLESTON, WV  
 25301-1757 304-558-8582**

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS		
03/22/2011						
BID OPENING DATE: 04/21/2011		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		952-90		
<p><b>OPEN-END BLANKET CONTRACT</b>            *****  <b>MANDATORY PRE-BID MEETING 4/5/2011 AT 10:00 AM</b>  <b>LOCATION: CAPITOL AND WASHINGTON STREETS, ONE DAVIS SQ</b>  <b>LOWER LEVEL TRAINING ROOM, CHARLESTON, WV 25301</b>            *****</p> <p><b>WVWSET ASSISTANCE - WITH ASSESSING WATER SYSTEMS</b></p> <p><b>REQUEST FOR QUOTATION</b></p> <p><b>TO PROVIDE ON-SITE ASSISTANCE WITH THE WV WATER SYSTEM EVALUATION TOOL IN ASSESSING SYSTEMS TECHNICAL, MANAGERIAL, AND FINANCIAL CAPABILITIES IN BECKLEY AND ST. ALBANS DISTRICTS PER THE ATTACHED SPECIFICATIONS.</b></p> <p><b>MANDATORY PRE-BID</b>  <b>A MANDATORY PRE-BID WILL BE HELD ON 4/5/2011 AT 10:00AM AT CAPITOL &amp; WASHINGTON ST. AT ONE DAVIS SQ. . ALL INTERESTED PARTIES ARE REQUIRED TO ATTEND THIS MEETING. FAILURE TO ATTEND THE MANDATORY PRE-BID SHALL RESULT IN DISQUALIFICATION OF THE BID. NO ONE PERSON MAY REPRESENT MORE THAN ONE BIDDER.</b></p> <p><b>AN ATTENDANCE SHEET WILL BE MADE AVAILABLE FOR ALL POTENTIAL BIDDERS TO COMPLETE. THIS WILL SERVE AS THE OFFICIAL DOCUMENT VERIFYING ATTENDANCE AT THE MANDATORY PRE-BID. FAILURE TO PROVIDE YOUR COMPANY AND</b></p>						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
SIGNATURE			TELEPHONE		DATE	
TITLE		FEIN		ADDRESS CHANGES TO BE NOTED ABOVE		

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



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 25301-1757 304-558-8582

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
03/22/2011				

BID OPENING DATE: **04/21/2011** BID OPENING TIME: **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION            PURCHASING DIVISION            BUILDING 15            2019 WASHINGTON STREET, EAST            CHARLESTON, WV 25305-0130</p> <p>PLEASE NOTE: A CONVENIENCE COPY WOULD BE APPRECIATED.</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER:-----RW/FILE 22-----</p> <p>RFQ. NO.:-----EHS11030-----</p> <p>BID OPENING DATE:-----4/21/2011-----</p> <p>BID OPENING TIME:-----1:30 PM-----</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p> <p>-----304-720-2324-----</p> <p>CONTACT PERSON (PLEASE PRINT CLEARLY):</p> <p>-----Jon C. Ludwig-----</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Jon C. Ludwig</i>	TELEPHONE 304-414-6054	DATE April 28, 2011
TITLE Director	FAX 95414 8574	ADDRESS CHANGES TO BE NOTED ABOVE

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**7**

ADDRESS CORRESPONDENCE TO ATTENTION OF  
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**304-558-0067**

VENDOR

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BUYER

**HEALTH AND HUMAN RESOURCES**

**BPH ENVIRO HLTH SERVICES**  
**350 CAPITOL STREET, ROOM 313**  
**CHARLESTON, WV**  
**25301-1757      304-558-8582**

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
03/22/2011				

BID OPENING DATE: **04/21/2011**      BID OPENING TIME: **01:30PM**

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
***** THIS IS THE END OF RFQ    EHS11030 ***** TOTAL:						<u>\$214,220.00</u>

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
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DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
03/24/2011				

BID OPENING DATE: 04/21/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 1						
1. TO VERIFY THAT THE MANDATORY PRE-BID MEETING WILL TAKE PLACE ON 4/5/2011.						
2. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.						
EXHIBIT 10						
REQUISITION NO.: EHS11030						
ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
ADDENDUM NO.'S:						
NO. 1 <input checked="" type="checkbox"/>						
NO. 2 <input checked="" type="checkbox"/>						
NO. 3 <input type="checkbox"/>						
NO. 4 <input type="checkbox"/>						
NO. 5 <input type="checkbox"/>						
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.						
VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL						

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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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**25301-1757 304-558-8582**

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
03/24/2011				

BID OPENING DATE: **04/21/2011** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p style="text-align: center;">             SIGNATURE            ...TETRA TECH., INC...            COMPANY            ..... APRIL 28, 2011 .....            DATE         </p> <p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p> <p>REV. 09/21/2009            END OF ADDENDUM NO. 1</p>						

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VENDOR

VENDOR

HEALTH AND HUMAN RESOURCES

BPH ENVIRO HLTH SERVICES  
 350 CAPITOL STREET, ROOM 313  
 CHARLESTON, WV  
 25301-1757 304-558-8582

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
04/14/2011				
BID OPENING DATE: 04/28/2011		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 2						
1. QUESTIONS AND ANSWERS ARE ATTACHED. 2. TO MOVE THE BID OPENING DATE OUT FROM 4/21/2011 TO 4/28/2011. 3. ADDENDUM ACKNOWLEDGEMENT IS ATTACHED. THIS DOCUMENT SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO SIGN AND RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID. EXHIBIT 10						
REQUISITION NO.: EHS11030						
ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
ADDENDUM NO.'S:						
NO. 1 .. X .....						
NO. 2 .. X .....						
NO. 3 .....						
NO. 4 .....						
NO. 5 .....						
I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.						
VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL						

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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
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DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
04/14/2011				

BID OPENING DATE: 04/28/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
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RFQ No. EHS11030

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

**WITNESS THE FOLLOWING SIGNATURE**

Vendor's Name: TETRA TECH, INC.

Authorized Signature: [Signature] Date: April 20, 2011

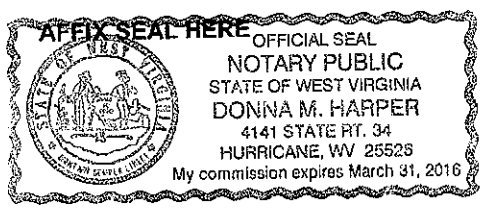
State of West Virginia

County of Putnam, to-wit:

Taken, subscribed, and sworn to before me this 20<sup>th</sup> day of April, 2011.

My Commission expires March 31, 2016

NOTARY PUBLIC [Signature]



Rev. 09/08

# State of West Virginia VENDOR PREFERENCE CERTIFICATE

Certification and application\* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

**1. Application is made for 2.5% resident vendor preference for the reason checked:**

- Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
- Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
- Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,

**2.  Application is made for 2.5% resident vendor preference for the reason checked:**

Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

**3. Application is made for 2.5% resident vendor preference for the reason checked:**

Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

**4. Application is made for 5% resident vendor preference for the reason checked:**

Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,

**5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,

**6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (*West Virginia Code*, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Tetra Tech Inc

Signed: 

Date: April 28, 2011

Title: Director

\*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
10/19/2010

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Insurance Services West, Inc. Los Angeles CA Office 707 Wilshire Boulevard Suite 2600 Los Angeles CA 90017-0460 USA	<b>CONTACT NAME:</b> PHONE (A/C. No. Ext.): (866) 283-7122      FAX (A/C. No.): (847) 953-5390	
	<b>E-MAIL ADDRESS:</b> PRODUCER CUSTOMER ID #: 570000036654	
<b>INSURED</b> Tetra Tech, Inc. 10306 Eaton Place, Suite 340 Fairfax VA 22030 USA	<b>INSURER(S) AFFORDING COVERAGE</b>	
	INSURER A: National Union Fire Ins Co of Pittsburgh	19445
	INSURER B: Insurance Company of the State of PA	19429
	INSURER C: Lexington Insurance Company	19437
	INSURER D:	
	INSURER E:	

Holder Identifier :

**COVERAGES**      **CERTIFICATE NUMBER:** 570040550232      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> X,C,U Coverage GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC			GL4581561 SIR applies per policy terms & conditions	10/01/2010	10/01/2011	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$1,000,000 PRODUCTS - COMP/OP AGG \$1,000,000
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON OWNED AUTOS			CA 826 36 72	10/01/2010	10/01/2011	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$100,000			TH1000027 SIR applies per policy terms & conditions	10/01/2010	10/01/2011	EACH OCCURRENCE \$1,000,000 AGGREGATE \$1,000,000
B	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	WC14770806 AOS WC14770807 CA	10/01/2010	10/01/2011	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE-EA EMPLOYEE \$1,000,000 E.L. DISEASE-POLICY LIMIT \$1,000,000

Certificate No : 570040550232

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Evidence of Insurance. Stop Gap Coverage for the following states: OH, WA, WY.

**CERTIFICATE HOLDER****CANCELLATION**

Tetra Tech Inc. 10306 Eaton Place, Suite 340 Fairfax VA 22030 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE  <i>Aon Risk Insurance Services West, Inc.</i>

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PLEASE PRINT

Date: 4/5/11

\* PLEASE BE SURE TO PRINT LEGIBLY - IF POSSIBLE, LEAVE A BUSINESS CARD

FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	TELEPHONE & FAX NUMBERS
WVU, Water Con. Services Center	P.O. Box 6064	PHONE (304) 293-4191 TOLL FREE
Rep: Gerald Turner	206506	FAX (304) 293-8161
Email Address: gturner@watercon.wvu.edu	West Virginia University	PHONE (304) 872-4470 TOLL FREE XT307
Company: Region 4 Planning & Development Council	885 Broad Street Suite 100	FAX (304) 872-1012
Rep: W. D. Smith	Summersville WV 26651	PHONE 304-431-7225 TOLL FREE
Email Address: wds@frontier.com		FAX 304-431-7235
Company: Region I Planning and Development Council	1439 E Main St. Suite #3	PHONE 304-414-0054 TOLL FREE
Rep: DAVID N. COLE	Princeton, WV 24740	FAX 304-720-2334
Email Address: davidcole@regiononepdc.org		PHONE 304-201-1689 TOLL FREE
Company: TETRA TECH INC.	803 QUARRIER STREET, SUITE 100 CHARLESTON, WV 25301	FAX 304-720-2334
Rep: JON C. LUDWIG		PHONE 304-201-1689 TOLL FREE
Email Address: jon.ludwig@tetratech.com		FAX 800-339-4513
Company: WV Rural Water Association	100 Young Street	PHONE 304-201-1694 TOLL FREE
Rep: Deborah L. Britt	Scott Depot, WV 25560	FAX 304-201-1694
Email Address: debbie.britt@citynet.net		

# SIGN IN SHEET

EHS 11030

Request for Proposal No. \_\_\_\_\_

PLEASE PRINT

Date: \_\_\_\_\_

\* PLEASE BE SURE TO PRINT LEGIBLY - IF POSSIBLE, LEAVE A BUSINESS CARD

TELEPHONE & FAX NUMBERS

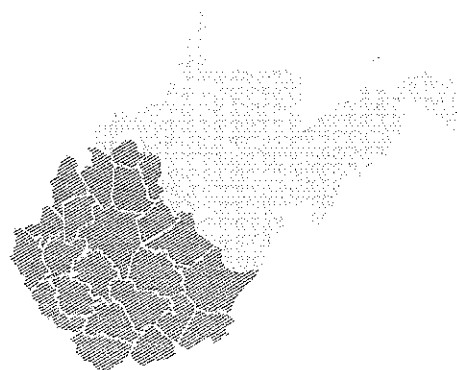
FIRM & REPRESENTATIVE NAME	MAILING ADDRESS	PHONE	TOLL FREE	FAX
Company: <u>WV Community Action Partnership</u>	<u>WV RSTAP</u>	<u>(304) 842-9287</u>		
Rep: <u>Lewis Don Padley</u>	<u>R.C. Sunset View</u>			
Email Address: <u>donley@westvirginia.com</u>	<u>Bridgeport WV 26330</u>	<u>(304) 842-5727</u>		
Company: _____	_____	PHONE	TOLL FREE	FAX
Rep: _____	_____	PHONE	TOLL FREE	FAX
Email Address: _____	_____	PHONE	TOLL FREE	FAX
Company: _____	_____	PHONE	TOLL FREE	FAX
Rep: _____	_____	PHONE	TOLL FREE	FAX
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Company: _____	_____	PHONE	TOLL FREE	FAX
Rep: _____	_____	PHONE	TOLL FREE	FAX
Email Address: _____	_____	PHONE	TOLL FREE	FAX



## Qualifications

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Tetra Tech, Inc. is pleased to present our price quote and qualifications for providing on-site assistance to Community Water Systems (CWSs) that choose to participate in the West Virginia Water System Evaluation Tool (WVWSET) program. Tetra Tech aims to provide quality service to the West Virginia Department of Health and Human Resources, Bureau of Public Health (BPH), Office of Environmental Health Services (OEHS), Environmental Engineering Division (EED). This package provides our qualifications to support the EED by providing on-site support, quality management, and cost efficiency in gathering data for the WVWSET program. The members of the proposed Tetra Tech team possess a breadth of experience, which ensures that the three main components of WVWSET, (technical, managerial, and financial capabilities) will be conducted by staff with relevant experience. We feel that we can provide EED with unmatched experience in all of the skill areas required for the successful completion of on-site assistance to each participating CWS encompassed by the St. Albans and Beckley Districts.



Our qualifications include:

- Local office in downtown Charleston, WV, which is only two blocks from the EED.
- Local staff with experience providing support to the West Virginia Source Water Assessment and Protection Program and Drinking Water State Revolving Fund Program.
- Local staff who have consistently worked on West Virginia projects for multiple years and can provide a high level of experience and continuity.
- Extensive experience with public stakeholder facilitation and conducting training in all facets of water resources management.

Tetra Tech can offer integrated services to clients, with our seamless team of professionals addressing all aspects of the project. We are always looking for ways to expand and enhance the field of water resources through unique applications, innovative tools and the integration of advancing technology.

The broad technical expertise of the combined staff enables our Charleston, WV office to provide a tailored team of specialists to meet our clients' needs in a cost effective manner. Over the past two years, Tetra Tech has provided efficient, high quality service supporting EED with Source Water Protection Plan development and administrative tasks associated with Drinking Water State Revolving Fund projects. While relatively non-technical in nature, these projects present complex logistical and data management/tracking issues that are similar to those in this project. In addition, over the past 8 years, Tetra Tech has successfully demonstrated the ability to meet similar challenges by maintaining overall schedules and budgets while simultaneously managing **nine** large total maximum daily load (TMDL) projects for West Virginia Department of Environmental Protection (WVDEP). The local knowledge and experience gained from managing these projects will ensure that we have key staff qualified to provide support across all of the technical service areas and to provide EED with effective mechanisms for project tracking and management. Tetra Tech believes that every client's needs should be addressed on a project-by-project basis. This individual attention to clients and our production of the highest quality technical



work are demonstrated by our continued ability to successfully compete on contracts that are follow-on to work initially done by Tetra Tech.

Tetra Tech will administer the proposed project from its Charleston, WV, office. We are proposing Jon Ludwig as the project manager with primary staff composed of Mindy Ramsey, Julie Wandling, and April Storm. Project support staff will consist of John Beckman and Sam Wilkes. Each member of the team will have clearly defined roles to ensure timely, high-quality, cost-effective performance under the contract.

Based on the project's scope and magnitude, it is critical that schedules are maintained in order to meet the objectives of the EED and to stay within project budgets. This will not only require exceptional performance by key technical staff, but will rely on the strong leadership provided by our project manager. In the past, the stability and continuity of our proposed staff has led to timely, high-quality, and cost-effective performance.

## **Key Staff**

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Table 1-1 summarizes the qualifications of the key staff identified for supporting this project. This table includes all the required vendor requirements identified in the Request for Quote (i.e., history of working with public water systems; history of using technical, managerial, and financial resources; resumes for key and supporting staff, and projects). Projects descriptions are included to provide details on the resources and Tetra Tech's role. Focused resumes providing relevant experience and associated skills for each of the proposed staff are also provided in Appendix A of this proposal. Table 1-2 summarizes experience with technical, managerial, and financial resources as they apply to specific water systems.



**Table 1-1. Summary of Relevant Experience of the Proposed Tetra Tech Team**

	DBE Quarterly Reporting Form	Davis Bacon Checklist	Davis Bacon Monthly Certification Form	Bond Conditions Checklist	ARRA Jobs Reporting	Final National (ARRA/SRF) Inspection Checklist	National ARRA Handbook	Substantial Transformation Evaluation (STE) Checklist	De Minimus Waiver Tracking Spreadsheet and Itemized Tracking Tool	Wage Rate and Whistleblower Required Posters	Safe Drinking Water Act and its 1996 Amendments	Source Water Assessment and Protection Program	Source Water Assessment Reports	Sanitary Surveys	Source Water Protection Plan Template	"Do Your Part, Protection Your Source Water, Protect Your Health" Brochure	DBE Guidance/Checklist	DHHR Policy 3801 Guidance/Forms/Selection to Award Checklist	DHHR 180-Subrecipient Grant Agreement	Invoice Template/Expenditure Reporting Documents	GWUDI Instructional Documents and "Is GWUDI Good or Bad?" FAQ sheet.	Ground Water Flow Model
<b>Key Staff</b>																						
Mindy Ramsey																						
April Storm	●	●	●	●	●	●	●	●	●													
Julie Wandling	●	●	●	●	●	●	●	●	●													
<b>Project Management &amp; Support Staff</b>																						
Jon Ludwig													●	●								
John Beckman													●	●								
Sam Wilkes													●	●	●	●						
<b>Projects</b>																						
DWTRF Program Support	●	●	●	●	●	●	●	●	●													
Source Water Technical Help Program										●	●	●	●	●	●							



**Table 1-2. Summary of Relevant Experience by Water System**

Resources	Alpine Lake Public Utility	Armstrong	Town of Bath (Berkeley Springs)	Charles Town, City of	Coon's Run PSD	Cowen PSD	Danese PSD	City of Elkins	Fairmont	Jane Lew PSD	Morgantown Utility Board	City of Parsons	Red Sulphur PSD	Sugar Creek PSD	Sun Valley PSD/City of Salem	Town of Union	Weich	Whitmer Water Association, Inc.	WVAW New River Regional Water
DBE Quarterly Reporting Form			●	●	●				●	●	●			●	●		●	●	●
Davis Bacon Checklist			●	●	●				●	●	●			●	●		●	●	●
Davis Bacon Monthly Certification Form			●	●	●				●	●	●			●	●		●	●	●
Bond Conditions Checklist			●	●	●				●	●	●			●	●		●	●	●
ARRA Jobs Reporting			●	●	●				●	●	●			●	●		●	●	●
Final National (ARRA/SRF) Inspection Checklist			●	●	●				●	●	●			●	●		●	●	●
National ARRA Handbook			●	●	●				●	●	●			●	●		●	●	●
Substantial Transformation Evaluation (STE) Checklist			●	●	●				●	●	●			●	●		●	●	●
De Minimis Waiver Tracking Spreadsheet and Itemized Tracking Tool			●	●	●				●	●	●			●	●		●	●	●
Wage Rate and Whistleblower Required Posters			●	●	●				●	●	●			●	●		●	●	●
Safe Drinking Water Act and its 1996 Amendments		●				●	●						●			●	●		●
Source Water Assessment and Protection Program		●				●	●						●			●	●		●
Source Water Assessment Reports		●				●	●						●			●	●		●
Sanitary Surveys		●				●	●						●			●	●		●
Source Water Protection Plan Template		●	●			●	●		●			●	●			●	●		●
"Do Your Part, Protection Your Source Water, Protect Your Health" Brochure		●	●			●	●		●				●			●	●		●
DBE Guidance/Checklist	●		●			●		●				●	●			●			
DHHR Policy 3801 Guidance/Forms/Selection to Award Checklist	●		●			●		●				●	●			●			
DHHR 180-Subrecipient Grant Agreement	●		●					●				●	●			●			
Invoice Template/Expenditure Reporting Documents	●		●					●				●	●			●			
GWUDI Instructional Documents and "Is GWUDI Good or Bad?" FAQ sheet.	●																		
Ground Water Flow Model																●			

## DWTRF Program Support

**CLIENT:**

WV Department of Health and Human Resources,  
Infrastructure and Capacity Development

**REFERENCE:**

Mr. Walter M. Ivey  
Director, EED  
350 Capitol Street, Room 313  
Charleston, WV 25301-3713  
304-356-4301  
walter.m.ivey@wv.gov

**DURATION:**

2009-Ongoing

**PROJECT VALUE:**

\$250,000

**KEY PERSONNEL:**

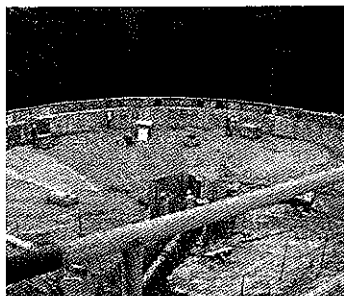
April Storm  
Julie Wandling

**SUPPORT STAFF:**

Jon Ludwig  
*Project Manager*

**KEY SERVICES:**

- Program Implementation Guidance
- Technical, Engineering, and Administrative Support Services
- Environmental Assessments
- Davis Bacon, Bond Conditions, and DBE Requirements
- ARRA Jobs Reporting
- Buy American and De Minimus Waiver Review
- ARRA Inspections



Under contract to U.S. EPA Region III, Tetra Tech assists the West Virginia Department of Health and Human Resources Drinking Water Treatment Revolving Fund (DHHR-DWTRF) review water infrastructure projects. Projects under review are those receiving supplemental financial appropriations through the American Recovery and Reinvestment Act (ARRA). Tetra Tech has been granted an additional contract that expands support to the base State Resolving Fund (SRF) program as well. Currently, Tetra Tech is providing technical and engineering support to 13 ARRA projects and 10 SRF water infrastructure projects.

To review projects, Tetra Tech attended conference calls and coordinated with the project teams. These teams consisted of other funding agencies, engineering firms, assistance recipients, legal services, accounting firms, and project administrators. Tetra Tech designed and deployed an online tracking tool to automate the pre-bid and pre-loan closing checklist process. This tool allows program staff to better determine the status of potential projects. In preparing the State's Project Priority List (PPL) for 2010 and 2011, Tetra Tech evaluated the readiness-to-proceed status of over 120 projects.

To ensure the funding recipients are in compliance with their bond requirements, Tetra Tech assisted DHHR to review required documentation. These requirements and programs included:

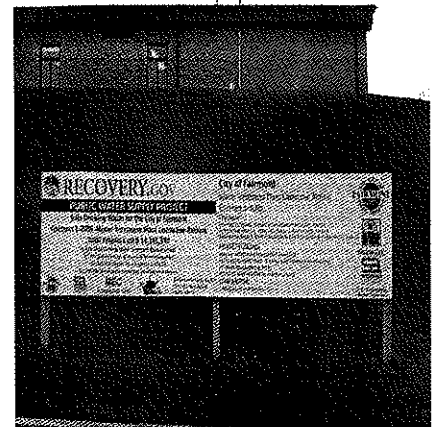
- Environmental Assessments
- Disadvantaged Business Enterprise Good Faith Efforts
- Davis Bacon Act
- Bond Conditions
- ARRA Jobs Reporting
- Buy American
- De Minimus Waiver
- Green Ready Reserve

Tetra Tech created and maintains the WV-DHHR Projects Tracking Database to manage the various pieces of documentation required by the DWTRF Program, ARRA, and the bond conditions of the Assistant Recipient Loan Agreement. In collaboration with DHHR, Tetra Tech also developed the Davis Bacon and Bond Requirements Checklists that are used to communicate required tasks and timelines to funding recipients. Tetra Tech staff facilitate communication between DHHR and funding recipients to help systems assess their technical and financial capacity to manage current and future loan opportunities.

Tetra Tech has completed several environmental reviews to assess whether projects qualify for Findings of No Significant Impact (FONSI) or Categorical Exclusions (CE). Tetra Tech corresponds directly with the project teams to acquire the necessary items to complete this review.

### Disadvantaged Business Enterprise Good Faith Efforts (DBE)

Assistance recipients and construction contractors were tasked with demonstrating compliance with the Disadvantaged Business Enterprise Good Faith Efforts (DBE) solicitation process. In addition to the DBE Quarterly Reporting Form instructions, Tetra Tech provided guidance to the administrators on how to properly complete the **DBE Quarterly Reporting Form**.



## Davis Bacon and Related Acts

Davis Bacon and Related Acts are other bond conditions required of the assistant recipients. Project Teams are sent the **Davis Bacon Checklist**, **Davis Bacon Monthly Certification Form**, and the required Posters.

The **Davis Bacon Checklist** certifies who will be submitting and completing the necessary documentation review. Tetra Tech works closely with the Davis Bacon administrators to ensure that the necessary documentation is completed for each project as specified in the Davis Bacon checklist. For example, the Davis Bacon Administrators are contacted at least monthly to submit the initial, quarterly, and final interviews, each with the corresponding certified payrolls, fringe benefits documentation for each prime contractor, **Davis Bacon Monthly Certifications**, and the labor hours for each week of construction.

Tetra Tech tracks the submitted information using the DWTRF Projects Database and continues working with the Davis Bacon administrator for missing items. Another item that is tracked is the Notice to Proceed Date for each prime contractor. This date is used as a milestone date in the database to aid in the review of Davis Bacon documentation for compliance with DB Administrator's conducting initial interviews within the first two weeks of payroll.

The Substantial Transformation Date is used as a milestone date for the DB Administrator's conducting final interviews within the last two weeks of payroll. Tetra Tech performs spot checks of the certified payroll submitted against the prevailing wages, and reviews the interviews for conflicts. During the onsite inspections of the projects, Tetra Tech verifies that the Assistant Recipient's Davis Bacon files are complete for each week of construction and also ensures that each work site has posted the appropriate posters in a location accessible to laborers and mechanics. Some examples of these Posters are: the Davis Bacon Wage Poster, ARRA Logo, Whistleblower (ARRA/SRF) Poster, and State and Federal Prevailing Wage Rates.

## EMPLOYEE RIGHTS UNDER THE DAVIS-BACON ACT

### FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

**PREVAILING WAGES** You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this notice for the work you perform.

**OVERTIME** You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

**ENFORCEMENT** Contract payments can be withheld to ensure workers receive wages and overtime pay due, and delinquent contractors may apply if overtime pay requirements are not met. Davis-Bacon contract clauses give contract Administrator and Department of Contractors from future federal contracts for up to three years. A contractor who fails to certify certified payroll records or refuses wage schedules may be subject to civil or criminal prosecution, fines and/or imprisonment.

**APPRENTICES** Apprentices rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

**PROPER PAY** If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Office listed below.

or contact the U.S. Department of Labor's Wage and Hour Division.

For additional information:

**1-866-4-USWAGE** **WHD**  
(1-866-487-3843) TTY: (1-877-352-5527)

**WWW.WAGEHOUR.DOL.GOV**

U.S. Department of Labor | Laborers and Mechanics | Davis-Bacon Act

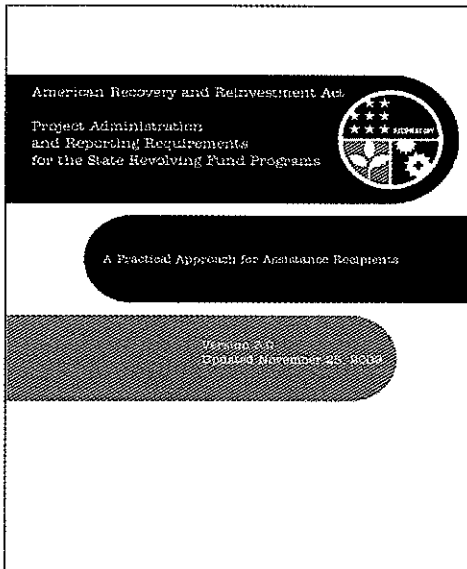
Item	Description	Due Date	Responsible Party
1	AD BIDDING PLAN	...	...
2	STATE BOND	...	...
3	ARRA LOGO	...	...
4	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
5	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
6	DAVIS BACON WAGE POSTER	...	...
7	ARRA LOGO	...	...
8	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
9	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
10	DAVIS BACON WAGE POSTER	...	...
11	ARRA LOGO	...	...
12	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
13	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
14	DAVIS BACON WAGE POSTER	...	...
15	ARRA LOGO	...	...
16	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
17	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
18	DAVIS BACON WAGE POSTER	...	...
19	ARRA LOGO	...	...
20	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
21	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
22	DAVIS BACON WAGE POSTER	...	...
23	ARRA LOGO	...	...
24	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
25	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
26	DAVIS BACON WAGE POSTER	...	...
27	ARRA LOGO	...	...
28	WHISTLEBLOWER (ARRA/SRF) POSTER	...	...
29	STATE AND FEDERAL PREVAILING WAGE RATES	...	...
30	DAVIS BACON WAGE POSTER	...	...

## Bond Conditions Checklist

Tetra Tech developed the **Bond Conditions Checklist** to highlight the necessary items and timelines for the System to comply with other conditions of their Assistant Recipient Loan Agreement. This list is sent shortly after loan closing to each project. Tetra Tech tracks the expected dates using the DWTRF Projects Database and continues working with the Systems on the submittal of the monthly and upcoming items.

The **Bond Conditions Checklist** is comprised of items that are due monthly preceding the loan closing to two years after completion, and others due at substantial completion. For example, the systems are asked to submit the Monthly Exhibit A's, the Annual Budget, and Audit Report which begins at loan closing until two years after construction is complete. The Annual Budget and Audit Report should be reviewed to compare the budgeted expenses versus the actual operating expenses. Tetra Tech requests and tracks the Monthly Exhibit A every month. These forms are reviewed and the system is flagged for deficit trends.

During the initial set up of the project into the Projects DWTRF Database, Tetra Tech also tracks the Repayment Start Date and determined the timeline for the Rate Ordinance Affect Date. The Rate Ordinance Affect Date is used as the target date for a follow up with the project. Tetra Tech will send a reminder to the project of this target date to support them in meeting their contractual obligations. Some other examples of the bond conditions Tetra Tech requests are the As Built Plans, Operation and Maintenance Manuals, Certified Operator, certify the number of customers to the PSC, and the Annual Maintenance Audit.



## ARRA Jobs Reporting

Following EPA guidelines under Section 1512, Tetra Tech implemented the **ARRA Jobs Reporting** for the WV-DHHR. WVDHHR and Tetra Tech developed the ARRA Jobs Reporting spreadsheet for the submittal of the monthly/quarterly jobs created/retained numbers by all the ARRA loan recipients. Every month, the labor hours spreadsheet is collected from all the Systems, and calculations are performed to determine the Full Time Equivalent (FTE) hours. This information is entered into the online Drinking Water Project & Benefits Reporting System (DW PBR) and also provided to the State to post to the governor's webpage.

**Buy American** provisions under Section 1605 of ARRA required all components procured to be American Iron, Steel and Manufactured Goods. Tetra Tech led the onsite inspections of the projects following EPA's inspection guidelines checklist. Tetra Tech coordinated with the systems and sent electronic copies of the **Final National (ARRA/SRF) Inspection Checklist**, the **National ARRA Handbook**, the **Substantial Transformation Evaluation (STE) Checklist**, and the **De Minimus Waiver Tracking Spreadsheet and Itemized Tracking Tool**.

## De Minimus Waiver and Green Ready Reserve

Tetra Tech sends a copy of the Final National (ARRA/SRF) Inspection Checklist to the project team when scheduling the onsite inspection. The Final National (ARRA/SRF) Inspection Checklist highlights the Jobs Reporting, Davis Bacon and Related Acts, Buy American, **De Minimus Waiver**, and **Green Ready Reserve** sections that the project will be reviewed for compliance. A modified version that excludes the Jobs Reporting, Buy American and De Minimus sections is used for the base program projects. The appropriate checklist is used when Tetra Tech performs initial and final onsite reviews for each DWTRF project. Projects with significant findings are closely monitored and Tetra Tech will perform additional inspections until compliance is verified. However, many of the ARRA projects received monthly onsite inspections.

Materials and components were reviewed during onsite inspections to ensure compliance with Buy American by requiring the **Substantial Transformation Evaluation Checklist** and supporting documentation such as verifications from manufacturers, cut sheets, invoices, or substantial process descriptions to support compliance. Projects that received findings for BA compliance are directed during the inspection and also on a follow up Inspection Summary email that goes back out to the whole project team (system, db administrators, engineers, DHHR) of the necessary items needed to resolve the findings. For example, Tetra Tech has asked the Project Teams to compile a supporting documentation letter that describes the "What, Who, How, and Where" of the manufacturing processes involved in the transformation for component(s) that are checked on the Substantial Transformation Evaluation Checklist as being substantially transformed in America. Projects that have unusual findings or ones having difficulty understanding the requirements will be sent specific guidance information to aid the System in the compilation of the supporting documentation. For instance, Tetra Tech sends engineers and contractors that need a quick overview of the ARRA Buy American requirements the EPA-816-F-10-062 informational handout form. Tetra Tech will also send contractors additional guidance information from the Buy American Act along with the STE checklist.

The **De Minimus Waiver** allows incidental materials such as nuts, bolts, and gaskets to be exempted from Buy American requirements. The requirement allows only 5% of the total materials costs to be considered de minimus. Tetra Tech developed the De Minimus Tracking Spreadsheet and Itemized Tracking Tool for the contractors to manage their incidentals/costs that would be considered under the De Minimus Waiver. Tetra Tech checks that the De Minimus Waiver is applied correctly at the onsite inspections, and monitors the total percent exempted from the Buy American requirements. All the receipts on the itemized list are verified during inspections and copies obtained for the files. Tetra Tech tracks the Buy American findings and De Minimus Waiver information into the DWTRF Projects Database and continues working with the Systems on the submittal of outstanding items.

The **Green Ready Reserve** requires States to use at least 20% of the grant for projects that include green infrastructure, water or energy efficiency improvements or other environmentally innovative activities. These projects were required to submit and have approved documentation supporting the business case which demonstrates energy or water efficiency benefits. Tetra Tech is following up with the Assistance Recipients to provide documentation supporting the business case and the findings once the project is complete.

## Source Water Technical Help Program

### CLIENT:

WV Department of Health and Human Resources, Source Water Assessment and Protection (SWAP) Program

### REFERENCE:

Mr. J. Scott Rodeheaver  
SWAP Program Asst. Manager  
350 Capitol Street, Room 313  
Charleston, WV 25301-3713  
304-558-2981  
Scott.J.Rodeheaver@wv.gov

### DURATION:

2009-Ongoing

### PROJECT VALUE:

\$800,000 combined

### KEY PERSONNEL:

Mindy Ramsey

### SUPPORT PERSONNEL:

Jon Ludwig  
*Project Manager*  
Sam Wilkes  
John Beckman

### KEY SERVICES:

- Educate water system participants on source water protection described in SDWA and SWAP Program documents.
- Reference source water information from Source Water Assessment Reports and Sanitary Surveys to establish project purpose.
- Prioritize threats to source water and develop management strategies to address threats.
- Identify education and outreach activities to raise source water protection awareness, including created brochure.
- Document contingency plans for water shortages and emergency incidents.
- Gain WVDHHR SWAP Program approval for protection plans on behalf of each water system.

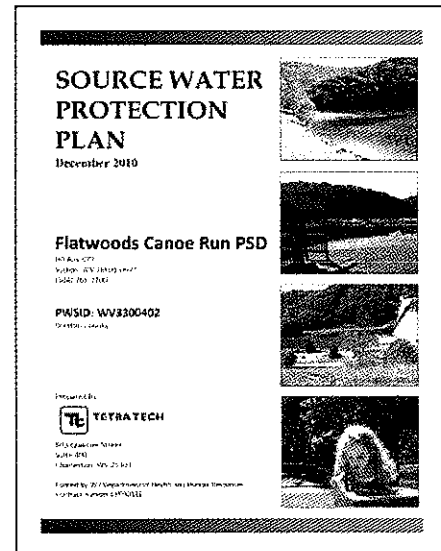
In 1999, the West Virginia Department of Health and Human Resources (WVDHHR) received USEPA approval for their Source Water Assessment and Protection (SWAP) Program. The SWAP Program responsibilities are to delineate protection areas for sources of drinking water; inventory potential contaminant sources (PCSs); rate how susceptible each water source is to contamination; and make information available to the public. Once these responsibilities are fulfilled the SWAP program encourages water systems to implement protection activities on a voluntary basis.

Because water supply systems are often unable to dedicate limited resources to investigating threats to source water, the WVDHHR allocated funds to establish the Source Water Technical Help Program. The goal of the program is to develop source water protection plans (SWP Plans) for community water systems across West Virginia. In 2009, WVDHHR awarded Tetra Tech two contracts to develop SWP Plans for 104 community public drinking water systems.

Tetra Tech is responsible for contacting each water system and arranging three separate meetings. The first meeting initiates the SWP Plan project, at which time Tetra Tech staff explains the intent of source water protection as described by the **Safe Drinking Water Act (SDWA) and its 1996 Amendments** and the **SWAP Program documents**. Source water information is referenced from system specific **Source Water Assessment Reports** and **Sanitary Surveys** to educate participants about threats to their system and possible protective strategies to protect their source. Tetra Tech gathers important information about water system sources, demand, storage, etc. and conveys updated information to the SWAP Program staff.

Tetra Tech coordinates with the SWAP Program staff to gather previously delineated source water protection areas and historical PCSs. Tetra Tech also queries existing databases of federal and state-regulated PCSs such as NPDES permits and oil/gas wells. Following data gathering efforts and the initiation meeting, Tetra Tech performs field surveys to identify new PCSs and to verify historic and regulated PCSs. Tetra Tech incorporates data gathered into the **SWP Plan Template** originally distributed by the SWAP Program. Tetra Tech has made contributions to the template development that have been shared and used consistently by others completing SWP Plans.

During the second meeting, water system operators and/or administrators review and comment on the draft SWP Plan. Each SWP Plan identifies



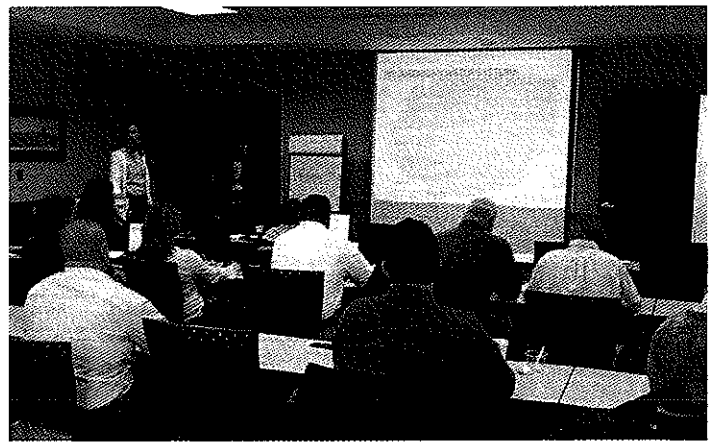
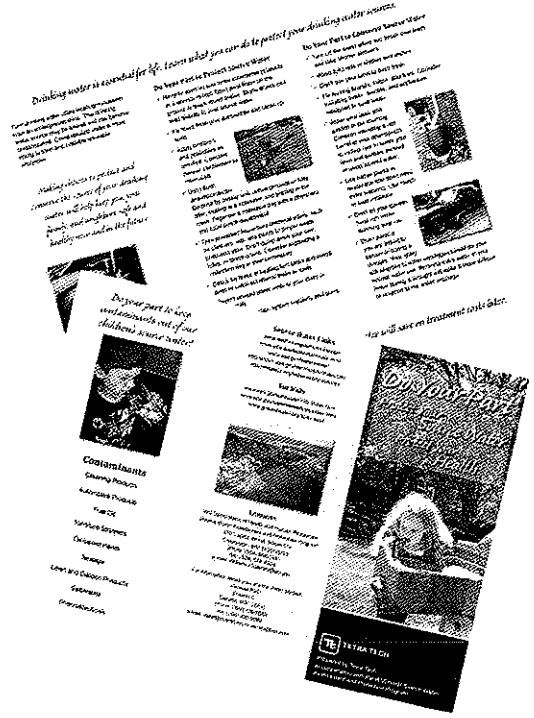


recommended members for a Protection Team and provides protection area boundaries, an updated PCS inventory, and a prioritized list of PCSs. To properly prioritize threats, Tetra Tech researches PCSs and describes their specific threat to the system, as well as possible management strategies to address each prioritized PCS, including contact information for regulatory agencies and resources available to assist them during implementation. The SWP Plan provides an Implementation Plan that identifies how to get started, responsible parties, general time frames, and potential expenses for activities.

In addition, the SWP Plan presents recommended education and outreach activities to raise public awareness of source water issues. In order to assist in education and outreach activities, Tetra Tech compiles and lists several internet resources concerning source water protection, conservation, and emergency response, appropriate for audiences ranging from school age children to community decision makers. Because water systems often do not have monetary resources available for education and outreach, Tetra Tech created a brochure, **“Do Your Part, Protect Your Source Water, Protect Your Health,”** that is provided to the water systems along with SWP Plans and can be customized easily, providing an affordable education and outreach tool for all systems.

Lastly, the SWP Plan documents the water systems' contingency plans for short term and long term water shortages, as well as procedures for toxic spills and other emergency incidents. If these plans are not established, Tetra Tech discusses options to obtain water and provides a recommended emergency incident procedure.

Tetra Tech submits the protection plan to the SWAP Program for review and official approval on behalf of the water system. Once approved, Tetra Tech conducts a final meeting, scheduled to present the SWP Plan and a recognition certificate to the water system. These meetings are generally open to the public, and are frequently incorporated into the agenda of a regularly scheduled town council or water system board meetings. When appropriate, Tetra Tech utilizes computer and projector to display the SWP Plan for meeting participants, or to make site specific Power Point presentations describing the SWAP Program and the SWP Plan project. In addition to two hard copies of the SWP Plan, Tetra Tech also provides electronic versions of the SWP Plan, brochure, example letters to businesses and residents, maps, PCS data and photos to the systems on a compact disc, which will assist them during implementation and allow them to update the SWP Plan when needed.





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## Equipment and Vendor Availability

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This section provides information on the support services and equipment capabilities for the Charleston West Virginia Office as requested in the Request for Quote.

Tetra Tech maintains state-of-the-art computing facilities, equipment, and software (Tables 1-3 through 1-5) to support our clients' needs for project management, information management, data and geospatial analysis, database management, Internet access, file maintenance and storage, document production, and graphics generation.

Tetra Tech's computer hardware and systems capabilities are also listed in Table 1-3. Tetra Tech uses electronic communication systems to facilitate data transmission, e-mail, and Internet access. We maintain intra-office and Internet connectivity and an Internet Server that hosts a File Transfer Protocol (FTP) site and a World Wide Web (WWW) site. Tetra Tech maintains full 24-channel T1 direct access to the Internet for rapid and reliable external electronic communications in all of its offices, including the Charleston, WV location.

Software applications used by Tetra Tech for database and web development applications are listed in Table 1-4, for GIS development and data processing are listed in Table 1-5. The Charleston Office has the ability to produce Adobe PDF documents using Adobe Acrobat 9 Professional software. Office staff also has access to laptop computers with all the required software, including portable AT&T wireless internet access. Tetra Tech maintains an account with Verizon services for our teleconferencing and web conferencing needs. Teleconferencing and web conferencing can be arranged immediately utilizing Microsoft LiveMeeting with an unlimited number of attendees.

**Table 1-3. Desktop Access Data Processing Hardware**

Equipment	Quantity
High Capacity Network Server	1
Pentium 4 Processor/Pentium Centrino/IBM-Compatible PC	10
Notebook/Laptop IBM-Compatible PC	5
Hewlett-Packard Office InkJet Pro K8600	1
Hewlett-Packard LaserJet 1200	1
Konica Minolta 2300DL	1
Hewlett-Packard OfficeJet Pro 8000 (mobile printer)	2
Konica Minolta 7033 Copier	1
Panasonic KX-FL501 Laser Fax/Copier	1



**Table 1-4. Database, Software, and Web Development Software Packages**

Database Software	Other Software	Web Development Software
<ul style="list-style-type: none"><li>▪ Oracle 8i/9i/10i</li><li>▪ MSSQL Server/Enterprise 2005/2008</li><li>▪ Microsoft Office 2007</li><li>▪ Microsoft Project 2007</li><li>▪ Microsoft Visio 2008</li><li>▪ Microsoft Visual Studio 2008</li><li>▪ MS Visual Studio Ultimate 2010</li><li>▪ MS Office One Note 2007</li></ul>	<ul style="list-style-type: none"><li>▪ Adobe Acrobat 9 Pro</li><li>▪ Internet Explorer</li><li>▪ Firefox</li><li>▪ Safari</li></ul>	<ul style="list-style-type: none"><li>▪ Dreamweaver MX 2004</li><li>▪ Macromedia Studio MX</li><li>▪ Microsoft Front Page</li><li>▪ Fireworks</li><li>▪ Flash</li><li>▪ Photoshop</li><li>▪ JDeveloper</li></ul>

**Table 1-5. GIS Development and Data Processing Hardware**

Equipment	Quantity
Pentium 4 Processor IBM-Compatible Workstation/Laptop	15
Terabyte Mass Storage	1
500 Gig USB Storage	8
100 meg USB storage	6
CD/DVD Writers	15
ESRI ArcView/Arcinfo 9	4
ESRI Spatial Analyst 1.1	4
AT&T Internet Service Provider (Portable USB)	2

# Resumes

**EDUCATION**

M.S., Environmental Pollution Control, The Pennsylvania State University, 1997

B.S., Environmental Science, Widener University, 1995

**YEARS OF EXPERIENCE**

Total: 13

With Tetra Tech: 11

**PROFESSIONAL AFFILIATIONS**

American Water Resource Association

Water Environment Federation

**KEY AREAS OF EXPERIENCE**

- DWTRF and ARRA project oversight and technical support
- SRF program support and PPL evaluation assessments
- Source Water Protection Plans developed for public water supply systems
- Extensive West Virginia TMDL experience (>3,500 TMDLs)
- Extensive knowledge of WVDEP TMDL Program goals & objectives
- Extensive knowledge of WVDEP NPDES permits
- Project management
- Watershed assessment & planning
- MDAS/LSPC Watershed Modeling
- Pollutant source assessment
- GIS spatial analysis

Mr. Ludwig is the director of Tetra Tech's Charleston, WV office. He is a senior environmental scientist with over 13 years experience providing technical and management support to federal, state, regional, and private clients in the areas of water resources, source water protection, and watershed and water quality assessment and modeling. Over the past 10 years, Mr. Ludwig has successfully managed large, multi-million dollar contracts and is currently managing large water resource projects with West Virginia Department of Environmental Protection (WVDEP) and West Virginia Department of Health and Human Resources (WV DHHR) which are directly related to the proposed project.

**Selected Project Experience**

**Source Water Protection Plan Support for WV DHHR.** Currently managing two support contracts with WV DHHR's Source Water Protection Technical Help Program (SWPTHP) by implementing source water protection activities for 104 community public water supply systems in the Beckley, Philippi, and Kearneysville Districts. Source water protection activities include public meetings and facilitation with local stakeholders followed by a survey of potential contaminant sources. Site-specific reports for each CPWS system are being developed and will include a summary of the PCS survey, management plan, contingency plan, and identification of potential funding sources.

**WV DHHR Infrastructure and Capacity Development Support.** Under contract with USEPA Region 3, managed and directed tasks associated with assisting the WV DHHR Drinking Water Treatment Revolving Fund (DWTRF) with reviewing water infrastructure projects that were identified as priorities to receive supplemental financial appropriations through the American Recovery and Reinvestment Act (ARRA). Provided technical and engineering support to 13 water infrastructure projects that received \$19,250,000 of ARRA financial appropriations through the DWTRF program. Tetra Tech's current contract has expanded this technical and engineering support to all the base State Resolving Fund (SRF) program projects as well. These 10 SRF projects are in various stages ranging from pre-bid, loan closing, construction, and a couple that are nearing completion and post construction stage. Activities included coordination of project teams consisting of other funding agencies, engineering firms, assistant recipients, legal services, accounting firms, and project administrators; design and deployment of an online tracking tool to automate the pre-bid and pre-loan closing checklist process; preparation of the State's Project Priority List (PPL); evaluation over 120 projects readiness-to-proceed status for placement on the PPL; assessments of the technical, financial, and managerial capability of loan applicants to manage the proposed infrastructure; and environmental reviews to assess whether projects qualify for Findings of No Significant Impact or Categorical Exclusions.

**Statewide West Virginia TMDL Development Support for WVDEP.** Since 2002, served as project manager for statewide TMDL development support contracts with WVDEP. These comprehensive watershed studies include development of TMDLs for total iron, total manganese, dissolved aluminum, pH, selenium, chlorides, fecal coliform bacteria, and biological impairments in streams throughout West Virginia including Middle Ohio North and South, Elk River, Upper and Lower Kanawha River, North Branch/Potomac River, Upper Ohio North and South, Dunkard Creek, Youghiogheny River, Coal River, Gauley River, Potomac River Direct Drains, Cheat River, Greenbrier River, New River, Little

Kanawha River, and James River watersheds. To date, Mr. Ludwig has served as project manager for the development of over 1,280 EPA approved TMDLs in West Virginia with more than 870 currently under development.

**Re-Evaluation of the Cheat River Watershed TMDLs in West Virginia.** In support of WVDEP and USEPA EPA Region 3, served as project manager for re-evaluation of the Cheat River Watershed. Tetra Tech developed and calibrated mining data analysis system MDAS water quality models for pH, total iron, dissolved aluminum, manganese and fecal coliform bacteria. The model dynamically simulated stream acidity results from multiple sources including acid precipitation caused by sulfur and nitrogen emissions, as well as acid mine drainage (AMD) with very high concentrations of sulfate and dissolved metals (Fe and Al) from abandoned coal mining sites in the region.

**West Virginia Iron Troutwater Modeling Study.** In support of WVDEP, served as project manager for a high-resolution hydrology and water quality modeling study for two small trout streams in the Gauley River watershed, WV. The MDAS model was applied to simulate in-stream flow and water quality conditions to determine the range(s) of total iron concentrations that occur in viable trout waters as a result of precipitation induced runoff. Currently, results of this study are currently being used to refine existing approaches to total iron/sediment TMDLs and to support WVDEP's pursuit of coldwater fisheries water quality criterion revision.

**West Virginia TMDL Development Support for USEPA Region 3.** For USEPA Region 3, served as project manager for the development of over 1,000 pH and metals TMDLs in West Virginia including the Monongahela River, West Fork River, Tug Fork River, and Guyandotte watersheds. Provided lead role both technically and administratively in the evaluation of data and pollutant sources to assess and determine relationships between acid mine drainage and in-stream metals concentrations. Developed various technical approaches related to mining impacts (nonpoint and point sources) on metals loading and applied the Mining Data Analysis System (MDAS), a dynamic watershed modeling tool, to develop TMDLs throughout West Virginia. TMDL development addressed a variety of case-specific requirements related to water quality criteria, water use designations, source pollution conveyance methods, and permitting in large-scale watersheds. Applied the Environmental Fluid Dynamics Code (EFDC), a 3 dimensional hydrodynamic model, to develop TMDLs for the Monongahela River mainstem. Documented the technical approaches and compiled TMDL results in a final report. Led public meetings and prepared responses to written public comments.

**Pennsylvania TMDL Development Support for USEPA Region 3.** Served as project manager and lead technical advisor for TMDL development in Pennsylvania, including Kiskiminetas River Watershed (metals and pH), Chartiers Creek (metals), Brush Run (nutrients and siltation), Plum Run (nutrients and siltation), and Glanraffan (metals and Suspended Solids). Developed various technical approaches using the MDAS, AVGWLF and WARMF models to address metals, nutrients and siltation impairments in western PA watersheds. Documented and presented results in public meetings and prepared responses to written public comments.

**Left Hand Creek Watershed TMDL and Remediation Alternatives Analysis.** In support of US EPA Region 8, served as project manager to developed dissolved metals TMDLs for the Left Hand Creek watershed. Tasks included developing an in-stream chemical transport model to simulated water quality under critical flow conditions and assign loading to specific abandoned mine sources. The customized in-stream model includes 1-D transport model was used to dynamically simulate dissolved zinc, cadmium, copper, and lead in three reaches of the Left Hand Creek watershed. The model was designed to simulate in-stream concentrations of dissolved metals loadings while addressing the geochemical behavior of the source materials as well as the fate and transport of metals via both surface and subsurface pathways. The calibrated model was also used to evaluate remedial alternatives scenarios for multiple abandoned mine sites and guide the TMDL implementation process.

**Dissolved Metals Transport Modeling for California Gulch, CO.** In support of Colorado Department of Human Health and Environment, serving as Project Manager for dissolved metals transport modeling in the California Gulch watershed. Tetra Tech is developing an in-stream chemical transport model to evaluate remedial effectiveness scenarios of various mining reclamation activities in the California Gulch watershed. The customized in-stream model will include 1-D transport model equipped with sediment transport routines coupled with a dynamic chemical speciation model to simulate dissolved zinc and cadmium in California Gulch and the Upper Arkansas River.

**EDUCATION**

M.S., Biological Sciences,  
Marshall University, 2002

B.S., Biology, University of Rio  
Grande 1996

**YEARS OF EXPERIENCE**

Total: 9

With Tetra Tech: 1

**KEY AREAS OF EXPERIENCE**

- On-site meetings with public water systems to gather local knowledge of Source Water issues.
- Report writing to document resources, assessed threats, management strategies, and contingency plans.
- Public meeting presentations and facilitation.
- Interpretation of state and federal rules/policies to develop multiple guidance documents/ correspondence to public water systems regarding SWP Grants and GWUDI.
- Development of the Groundwater Flow Model Loan Program. Use of the model in public presentations and to educate Class I and II Operators during groundwater/well training.
- Conducting NEPA Studies for Threatened and Endangered Species, Wetlands, and Streams.
- Preparing data to identify biological stressors for the WV TMDL evaluation.

Ms. Ramsey is an environmental scientist whose training and experience has prepared her to perform data collection and analysis, write technical and planning documents, coordinate with stakeholders, and communicate environmental topics to the public. She has extensive experience in developing Source Water Protection Plans for public drinking water systems throughout West Virginia. As a state employee she administered a grant program and worked directly with water systems to plan projects and prepare financial documentation to obtain grant awards and reimbursements.

**Selected Project Experience**

**Source Water Protection Technical Help Program.** Through a contract with the West Virginia Department of Health and Human Resources, Source Water Assessment and Protection (WV SWAP) Program, she is currently developing Source Water Protection Plans for public drinking water systems throughout West Virginia. She is responsible for contacting each water system and arranging three separate meetings, during which the intent of source water protection is explained to meeting participants as described by the **Safe Drinking Water Act (SDWA) and its 1996 Amendments** and the **SWAP Program documents**. Source water information is referenced from system specific **Source Water Assessment Reports** and **Sanitary Surveys** to educate participants about threats to their system and possible protective strategies to protect their source. A **Source Water Protection Plan Template** is utilized to completely and consistently develop protection plans. Each plan identifies protection areas and potential contaminant sources; prioritizes threats; develops management strategies to address threats; contains an implementation plan to be carried out by the water system; recommends education and outreach activities; and develops contingency plans for source water in case of a short or long term water outages. To supplement the template, she worked closely with Tetra Tech graphic artists and WV SWAP Program managers to create a **brochure "Do Your Part, Protect Your Source Water, Protection Your Health,"** which is distributed electronically to all water systems to provide a relatively inexpensive outreach tool to assist water system in their protection efforts. Once the plan is finalized, she seeks WV SWAP Program approval and often presents the plans at meetings open and attended by the public. She has led projects to complete 17 protection plans and begun the process with 25 others.

**WVSWAP Source Water Protection (SWP) Grant Program Administration.** As a state employee for three years, she primarily administered the SWP Grant Program, working with drinking water systems to finalize subrecipient grant awards of federal funds. In order to selected grant recipients, she was responsible for modifying and distributing grant solicitations, consulting with water systems to develop protection and planning projects, and evaluating grant applications and selecting grantees. She worked closely with applicants/grantees at every stage directly contacting them via telephone, electronic mail, letter, and in person. To reach awards, she prepared guidance documents, to educate grantees to state and federal requirements, including Disadvantages Business Enterprise (DBE) requirements and **DHHR Policy 3801** for awarding and monitoring grants, such as a **Selection to Award Flowchart** sent to selectees and available online, and a **DBE checklist and guide** sent to all applicants and selectees. She also contributed to the development of scopes of work and budgets for grantees. Through these actions she contributed necessary information for the formation of more than 20

**SWP DHHR 180-Subrecipient Grant Agreements.** In order to assist the grantees in obtaining grant fund reimbursements, she created an **invoice template** and distributed to grantees, along with **Expenditure Report Forms and instructions**. She was responsible for monitoring grant activities, reviewing and approving invoices, and requesting change orders when needed. She reported on grant programs for inclusion in reports and presentation to US EPA. She also prepared information to be posted on the WVDHHR SWAP website concerning the grant program. In addition to the SWP Grants, she assisted in the administration of the Infrastructure and Capacity Development Program Preliminary Evaluation, Planning, and Project Design Grants, as well as other grant and interagency agreements for the Environmental Engineering Division.

**WVSWAP and Operator Certification/Training Program Support and Promotion.** As a state employee, she performed additional tasks beyond the grant program to support and promote the **WV SWAP Program**. She communicated Ground Water Under the Direct Influence (GWUDI) evaluation requirements to new and older non-compliant public water systems through formal written request, district personnel coordination, and/or verbal explanations to operators. She created the **"Is GWUDI Good or Bad? Frequently Asked Questions"** to be included in all GWUDI correspondence. She also modified and distributed **additional GWUDI instructions/reporting forms** explaining requirements and procedure for water systems to collect samples. She provided onsite assistance to collect raw water samples for four water systems when district personnel were unavailable. She managed data provided for the evaluation and made GWUDI determinations. In addition to GWUDI, she completed tasks related to **Groundwater Flow Model Loan Program** to distribute model to area educators, included: conducting outreach, leading workshop to train on use of model, and monitoring model use.

In support of the Operator Certification and Training Program, instructed the Groundwater/Wells and Basic Mathematics portions of the Class I Water Operators Training multiple years and the Microbiology portion for the Class II Water Operators on one occasion. She used the ground flow model in training to demonstrate the susceptibility of groundwater to contamination due to natural infiltration and active pumping of an aquifer.

**National Environmental Policy Act (NEPA) Studies.** During previous employment, she managed tasks associated with NEPA studies to gain environmental clearance for several highway projects in West Virginia. As the task manager for the Endangered Species Act consultation with the USFWS, key tasks involved the Indiana bat, northern flying squirrel, running buffalo clover, and Cheat Mountain salamander and included: leading or participating in surveys; managing subcontractors; conducting habitat assessments; writing biological assessments and survey reports; writing letters and participating in meetings to gain USFWS concurrence. Other responsibilities related to NEPA studies included assessing streams utilizing EPA Rapid Bioassessment Protocol; and delineating wetlands.

**Biological TMDL Development, WV.** While at Tetra Tech, she has participated in the EPA stressor identification (SI) process for biologically impaired streams for Group C2 TMDL development for the WVDEP, included preparing data analyses of water chemistry, benthic macroinvertebrate, and physical habitat parameter. The EPA stressor identification methodology is used to identify pollutant stressors to the biological community to ensure that all significant pollutant sources (sediment, AMD, ionic strength, nutrients, habitat alteration, temperature, etc.) are evaluated in the TMDL process.



**EDUCATION**

B.S. Environmental Resource Management with a concentration in Water and Soil Conservation, Pennsylvania State University, 1997

**YEARS OF EXPERIENCE**

Total: 6

Years with Tetra Tech: 2

**TRAINING**

Pennsylvania stream surveying and sampling Training, PADEP, 2000-2002

Project WET, PADEP, 2002

Requirements for Hazardous Waste Operations & Emergency Response Personnel (OSHA 1910.120), including yearly re-certification; Hazardous Materials Site Worker Annual Recertification, 1997-2000

Project Management Training, ADVENT Environmental, Inc., 1998

Risk Management Training, ADVENT Environmental, Inc., 1998

**KEY AREAS OF EXPERIENCE**

- Davis Bacon and Bond Checklist
- Substantial Transformation Evaluation (STE) Checklist
- Davis Bacon Monthly Certification Form
- DBE Quarterly Reporting Form
- De Minimus Waiver Tracking Spreadsheet and Itemized Tracking Tool.
- Final National (ARRA/SRF) Inspection Checklist
- National ARRA Handbook
- PPL
- Public Outreach
- ARRA Reporting

Mrs. Storm has 6 years of experience in the environmental field performing administrative oversight, DWTRF project support, non-profit management, engineering consulting, business management, soil and water assessments, and hazardous materials programs. She is currently providing administrative oversight for the WVDHHR's American Recovery and Reinvestment Act (ARRA) projects. She has worked to develop the Piney Creek Watershed Based Plan to implement existing metals and fecal TMDLs. Mrs. Storm has also provided GIS and data management support for West Virginia Department of Health and Human Resources (WVDHHR) Source Water Protection Plans. Before joining Tetra Tech, Mrs. Storm's fieldwork experience included public and outreach and training, client interaction, maintaining water, soil and biological monitoring sites, environmental education instruction, and environmental outreach. She has administrative experience with environmental nonprofit oversight. Her project sites have included chemical manufacturing plants, general businesses, municipal landfills, abandoned mine land, water systems and whole watershed areas. Mrs. Storm also has familiarity working with Microsoft Office Suite, Global Positioning Systems, Visual Groundwater, and GIS software.

**Selected Project Experience**

**DWTRF Project Support, WV.** Mrs. Storm provided support to Department of Health and Human Resources Infrastructure and Capacity Development Department to oversee 13 ARRA and 10 SRF water infrastructure projects by tracking ARRA, Davis Bacon, and bond condition documentation submitted by the project's personnel. She provided developmental support for the ARRA and bond documents tracking tools and bond conditions and Davis Bacon checklists. Both checklist were sent out to all projects after the RTP was given. During the information gathering included contacting project personnel such as engineers, mayors, administrators, and contractors to put together such documents as the **Substantial Transformation Evaluation (STE) Checklist**, bond documents, **Davis Bacon Monthly Certification Form**, **DBE Quarterly Reporting Form** and the **De Minimus Waiver Tracking Spreadsheet and Itemized Tracking Tool**. She would also contact multiple systems per week and contact each system every month at a minimum through multiple emails and phone calls.

Project oversight duties also included conducting project site inspections in which Mrs. Storm would travel to the project site and check over all Davis Bacon prevailing wage rate, and **Buy American** documentation using the **Final National (ARRA/SRF) Inspection Checklist/Davis Bacon Inspection Checklist** to make sure the projects were in full compliance with regulations. While at the site, Mrs. Storm would also go over any and all documents with contractors so that they fully understood what was needed.

**Source Water Protection Field Surveys, WV.** For the West Virginia Department of Health and Human Resources, Source Water Assessment and Protection Program, Mrs. Storm used GIS to prepare project maps of potential contaminant sources. Maps were used in outreach presentations and were incorporated into source water protection plans for over 50 drinking water systems. She also performed data entry tasks in support of potential contaminant source field surveys. that is now being used in many Pennsylvania schools.

**Kiski-Conemaugh Stream Team, Ligonier, PA.** Mrs. Storm worked as the Water Monitoring/Site Coordinator of the KC Stream Team. Her work there included

managing the abandoned mine drainage monitoring sites throughout the Kiski-Counemaugh River Basin. She evaluated, marked, wrote directions, recalculated GPS units, and took quarterly samples for the monitoring sites. The data from the monitoring sites she choose was also used by the Pennsylvania Department of Environmental Protection. Her responsibilities also included recruiting, managing and training the volunteer core. Mrs. Storm has gained experience with creating and maintaining an Excel database, incorporating and organizing old databases from various groups, helping to get the data put into GIS, and teaching others how to use the database. She also spent time coordinating with other entities about issues in the watershed and worked on an Abandoned Mine Drainage curriculum that is now being used in many Pennsylvania schools.

**Dark Shade Brownfields Project (DSBP)/ Shade Creek Watershed Association (SCWA), PA.** As the Watershed Coordinator for the DSBP and the Executive Director of SCWA, Mrs. Storm had many responsibilities. For one, she has involved with the first ever full watershed to earn a Brownfield designation. While there, worked on a Brownfield job training certificate program that the DSPB was doing in conjunction with Carnegie Mellon University. The program took underprivileged from the Pittsburgh area and the Appalachian Mountain area and taught them skills for becoming Environmental Technicians. Mrs. Storm was responsible for writing the entrance and exit exam, and designing the curriculum and teaching a few of the classes. She was in charge of the risk, soil and water assessment classes; this included teaching the students about toxicology, chemistry, risk reporting, soil and water VOC, and petroleum testing, soil vapor analysis, water bacteria and AMD sampling, macroinvertebrate studies and water flow measurements. She was also in charge of the DSBP/SCWA monitoring programs. She held public meetings recruiting volunteers, trained people in coordination with the PADEP, managed the volunteer core, and transported the samples to the PADEP. Mrs. Storm also managed the excel database while there and shared her results with many other environmental entities such as the State DEP, consultants, and other non-profits.

Mrs. Storm worked as the Executive Director of the SCWA where she conducted monthly meetings, recruited volunteers for helping with projects, and wrote grant applications. She also taught about environmental and historical aspects of the Kiski-Conemaugh River Basin inside and outside the classroom environment.

**ADVENT Environmental, Inc., Charleston, SC.** Mrs. Storm worked as a Staff Scientist at ADVENT where her responsibilities included providing environmental services on groundwater and soil assessments. She was involved in many aspects of the assessments including data management, aquifer testing, sampling, remediation construction/design, soil vapor monitoring, soil disposal, reporting to governmental agencies, and site closure reports. Many of the assessments that she took part of involved various hazardous chemicals. Mrs. Storm worked on all facets of various projects reports from composing and mapping to peer review. She also gained some training in the bid process. Mrs. Storm performed database management tasks in Excel and created macros in Visual Basic for commercial site assessments. She also took the lead in transferring historical data into Access for a commercial client. A large amount of Mrs. Storm's job included creating 3D models for commercial groundwater assessments. Additionally, she carried out consulting services for assessment involving underground storage tanks. Her responsibilities included, but weren't limited to, overseeing construction, soil and groundwater sampling, overseeing line upgrades, and site closures.

**EDUCATION**

B.S. Biology, West Virginia State College, WV; 1998

**YEARS OF EXPERIENCE**

Total: 12

With Tetra Tech: 2

**KEY AREAS OF EXPERIENCE**

- Program Implementation
- Technical, Engineering, and Administrative Support
- Davis Bacon, Bond Conditions, and DBE Requirements
- Data manipulation in GIS, MS Excel and MS Access
- Client interaction and Guidance
- ARRA Jobs Reporting
- Buy American and De Minimus Waiver Review
- ARRA/SRF Onsite Inspections
- Wasteload Allocations
- NPDES Permitting

Mrs. Wandling is an environmental scientist specialized in providing regulatory program development, planning, and implementation. She has a combined 12 years of experience working at West Virginia Department of Health and Human Resources Drinking Water Treatment Revolving Fund and the West Virginia Department of Environmental Protection, Division of Water and Waste Management. She has assisted the DWTRF program with most aspects of the program such as EPA Audits, PPL, DBE, Davis Bacon, Bond Conditions, Jobs Reporting, Buy American, and De Minimus Waiver. Her years of experience at WVDEP have provided her a breadth of knowledge and experience in NPDES permitting, antidegradation implementation, and low flow estimating statistics.

**Selected Project Experience**

**West Virginia Department of Health and Human Resources: 2009-2011.** As a Tetra Tech resource specialist, Mrs. Wandling provides administrative and technical support of the WV DHHR-DWTRF Program. The initial work began as a result of the American Recovery and Reinvestment Act of 2009. Currently, this work has expanded to include the base State Resolving Fund (SRF) program as well. This combined workload consists of 13 ARRA and 10 SRF water infrastructure projects. Some of the areas of emphasis include: PPL, DBE, Davis Bacon, Bond Conditions, ARRA Job Reporting, Buy American, and the De Minimus Waiver.

In order to prepare for the anticipated second round ARRA stimulus money she helped to prepare the State's Project Priority List (PPL). This involved sending applications and reviewing documentation related to approximately 40 systems readiness to proceed status. She provides guidance and tracking of the **DBE Quarterly Reporting Form**. She also tracks this information in the DWTRF Projects Tracking Database she developed to manage and track the various pieces of documentation required by the DWTRF Program, ARRA, and Bond Conditions of the Assistant Recipient Loan Agreement.

In collaboration with DHHR, she helped develop the **Davis Bacon Checklist**. This checklist is crucial in communicating the required responsibilities and tasks of the Davis Bacon Administrator. Mrs. Wandling provides guidance to the systems and tracks the submittal of the **Davis Bacon Monthly Certification Form**. She also aided in sending and tracking the posting of the required **Posters**. She provided guidance to the systems on proper locations for posting these posters. For example, in a location that is accessible to all laborers and mechanics. These posters include the Davis Bacon Wage Poster, Whistleblower (ARRA/SRF) Poster, and State and Federal Prevailing Wage Rates. She also ensured that a picture of the ARRA Logo sign was taken for each project file.

Other documentation that is required for review is the initial, quarterly, and final interviews with the certified payroll overlapping the date of the interview. Also, the fringe benefits documentation. Mrs. Wandling performed spotchecks of this information to ensure the project is within compliance. For example, the wage rates were checked on several classifications/employees and if there were any issues this was immediately addressed with the Davis Bacon Administrator. If there was a discrepancy in the wages being paid, a later sampling of the payroll would be requested to ensure the payroll system was properly updated with the change.

Working with DHHR she helped develop the **Bond Conditions Checklist** to highlight the necessary items to comply with the Assistant Recipient Loan Agreement. This checklist covers the submittal of the Monthly Exhibit A's, Annual Budgets, Audit Reports, As Built Plans, Operation and Maintenance Manuals, Certified Operator, Certified Number of Customers to the PSC, and the Annual Maintenance Audit.

Mrs. Wandling supported the **ARRA Jobs Reporting** by providing support to the lead worker, and aiding in the communication of due dates to the systems. These jobs reporting spreadsheets are also used in the review of the Davis Bacon Interviews and Davis Bacon Monthly Certifications. Mrs. Wandling coordinated with the systems and sent electronic copies prior of the **Final National (ARRA/SRF) Inspection Checklist**, the **National ARRA Handbook**, the **Substantial Transformation Evaluation (STE) Checklist**, and the **De Minimus Waiver Tracking Spreadsheet and Itemized Tracking Tool**. She conducted and assisted coworkers in ARRA/SRF Onsite Inspections in which each of these items were reviewed. During the inspections, the files were reviewed for compliance with Jobs Reporting, Davis Bacon, and Buy American Requirements.

**West Virginia Department of Environmental Protection: 2001-2009.** As a state employee (Environmental Resources Specialist 3), Mrs. Wandling was the lead worker for the wasteload allocation (WLA) program for the Permitting Section of the Division of Water and Waste Management. In this capacity she implemented and managed the WLA program, and performed all water quality modeling for municipal and private sewage wastewater discharges. She compiled water quality data, and GIS information to ensure the discharge did not cause significant degradation to the stream. Once she determined the no significant impact on the water quality standard for dissolved oxygen she would then issue the WLA.

Mrs. Wandling ensured each WLA submittal met antidegradation guidelines, Chesapeake Bay initiative policy, ammonia criteria for aquatic life, and general WLA procedures/policies. She also coordinated the new or expanded WLA submittals with the state revolving fund and environmental enforcement sections for comments. Mrs. Wandling also implemented the antidegradation interim and final policies in relation to the WLA program. She worked with clients and helped guide them through the permitting processes and approval of AA/SEJ with the permitting and engineering sections of DWWM.

She was responsible for all correspondence with Permittees on the submittal of the NPDES application information. Performed technical reviews of all NPDES permit packages once they were submitted to the agency to ensure they were technically complete. Mrs. Wandling attended and acted in liaison for the WVDEP at the Quarterly W.V. Sewage Advisory Board Meetings. This board works to provide oversight for onsite sewage for the DHHR, DWWM, and industry. All alternative treatment systems must get approval from the board to be recommended for use in the state of WV.

Mrs. Wandling worked on the drafts of various NPDES permits such as: carwash, water treatment plants, sewage 50,000 gpd or less, HAU, and individual municipal sewage and industrial wastewater facilities. This work entailed making sure that any new criteria is applied to the facilities permit and incorporating any modifications to the facilities permit. If necessary, drafted an administrative order to comply with NPDES permit regulations or limitations.

**EDUCATION**

M.E.M., Environmental Management, Duke University, 1998

B.A., Biology, University of California – Santa Cruz, 1994

**YEARS OF EXPERIENCE**

Total: 14 (since 1997)

With Tetra Tech: 11 (since 2000)

**TRAINING**

Rosgen Level 1 Training, Applied Fluvial Geomorphology, 2006

Habitat Evaluation Procedures Workshop, Virginia Tech Continuing Education, 2002

Grass, Rush and Sedge Identification Workshop, West Virginia Natural Heritage Program, 1999

Core Heritage Program Methodology Training, The Nature Conservancy, 1999

**PROFESSIONAL AFFILIATIONS**

Southern Appalachian Botanical Society

**KEY AREAS OF EXPERIENCE**

- TMDL development
- Watershed modeling
- Water quality field studies
- Land use analysis and GIS
- Watershed data management
- Technical writing/editing
- Stream restoration evaluation and design
- Botanical surveys

Mr. Beckman is an environmental scientist specializing in TMDL development and natural resources inventory. He has 14 years of professional experience performing scientific research, analysis, and large scale field surveys. For the West Virginia Department of Health and Human Resources, Mr. Beckman is currently leading potential contaminant source surveys for over 100 drinking water systems. Mr. Beckman also leads the Tetra Tech fecal coliform TMDL development efforts for the West Virginia Department of Environmental Protection. His duties include water quality modeling, data management, GIS analysis, technical writing, field investigations, and public outreach support. Mr. Beckman also has experience conducting stream ecology and botanical studies throughout West Virginia.

**Selected Project Experience**

**Source Water Protection Field Surveys, WV.** For the West Virginia Department of Health and Human Resources, Source Water Assessment and Protection Program, led field surveys to verify potential contaminant sources for 100 drinking water systems. Served as primary point of contact for subcontractors and off-site field staff. Organized field data using GIS and MS Access databases. 2009-2011.

**TMDLs for the Middle Ohio North and South Watersheds, WV.** For the West Virginia Department of Environmental Protection (WV DEP), led fecal coliform TMDL development for watershed group C2. Performed GIS analysis to delineate model subwatersheds and manage pollutant source data. Built and calibrated MDAS watershed models. Developed CSO and MS4 model inputs. Incorporated permitted fecal coliform discharges into the watershed model, and developed TMDL load allocations and pollutant reductions for both point and nonpoint sources. 2010-2011.

**Perennial Streams Survey, WV.** Field botanist for USACE Huntington District project to assess hydrogeomorphology of headwater streams and vegetative characteristics of headwater riparian areas in southern West Virginia. Used field methods to determine canopy, shrub, and herbaceous percent cover and tree species. Surveyed bank angle, longitudinal profile, and streambank erosion. Used GPS to navigate to sites and record survey features. 2010.

**TMDLs for the Lower Kanawha Watershed, Elk River, and Patterson Creek, WV.** For the WV DEP, led fecal coliform TMDL development for watershed group B2. Used hydrologic and topographic GIS data to delineate model subwatersheds. Built and calibrated MDAS watershed models. Incorporated permitted discharges into the watershed model, and developed TMDL load allocations and pollutant reductions for both point and nonpoint sources. Met with wastewater treatment plant operators and city engineers to develop CSO and MS4 model inputs. 2009.

**Trout Water Iron Modeling Project, WV.** For the WV DEP, participated in model development efforts to investigate total iron concentrations in two trout streams, Elklick Run and Holcomb Run, both headwater streams in the Gauley River Watershed. Performed fieldwork to collect soil samples and estimate streambank erosion. Set up watershed model, compiled meteorological data, and prepared preliminary draft report. 2009.

**TMDLs for the Cheat River Watershed, WV.** For the WV DEP, led fecal coliform TMDL development for impaired streams in the Cheat River Watershed

(watershed group A2). Performed GIS analysis to delineate model subwatersheds and manage pollutant source data. Built and calibrated MDAS watershed models. Incorporated permitted discharges into the watershed model, and developed TMDL load allocations and pollutant reductions for both point and nonpoint sources. Attended public meetings to present TMDL results. 2008.

**TMDLs for the Upper Ohio South, Dunkard Creek, Youghiogheny Tributaries, and Camp Creek Watersheds, WV.** For the WV DEP, led fecal coliform TMDL development for watershed group E. Delineated model subwatersheds using GIS. Built and calibrated MDAS watershed models for hydrology and water quality. Modeled CSO point sources and MS4 areas. Incorporated permitted discharges into the watershed model, and developed TMDL load allocations and pollutant reductions for both point and nonpoint sources. Made figures and edited reports. 2007.

**TMDLs for New River and Greenbrier River Watersheds, WV.** For the WV DEP, served as TMDL development team member for watershed group D. Participated in the Stressor Identification workshop for biological TMDLs. Used GIS to delineate model subwatersheds. Built and calibrated MDAS watershed models. Developed TMDL load allocations and pollutant reductions. Assisted with agricultural pollution source tracking field surveys in impaired watersheds. 2006.

**TMDLs for Gauley River and Potomac Direct Drains Watersheds, WV.** For the WV DEP, served as TMDL development team member for watershed group C. Used watershed data to build MDAS models for fecal coliform and sediment. Performed hydrology calibration, water quality calibration, and load allocations for the Potomac Direct Drains watersheds models. Edited technical reports, and collected data for streambank erosion field studies. 2005.

**TMDLs for Coal River, Lower Kanawha, and North Branch Potomac Watersheds, WV.** For the WV DEP, served as TMDL development team member for watershed group B. Performed GIS analysis to contribute to the pollutant source reports for the three TMDL watersheds. Produced ArcInfo GIS project displaying TMDL results as part of the public TMDL report. Edited text and made figures for the public and technical TMDL reports. 2005.

**Wetlands Baseline Survey, ND.** For the Turtle Mountain Band of the Chippewa, developed survey protocol and sampled over 100 wetlands on tribal lands. Identified dominant vegetation, wildlife species, benthic substrate, invasive species, and anthropogenic disturbance. Designed MS Access database and ArcView GIS project to track and present survey results. 2004

**Wadeable Streams Assessment, NH, VT, ME.** For the USEPA Office of Water, served on a field crew to sample over 50 streams in New Hampshire, Vermont, and Maine to study stream ecology and geomorphology. Collected water chemistry samples and benthic macroinvertebrate specimens; also measured stream flow, substrate, vegetative cover, large woody debris, and fish habitat. 2004.

**Invasive Plant Survey and Mapping, U.S. Army, Southeastern United States.** Primary Investigator for invasive plant survey and mapping projects at five U.S. Army installations, including Blossom Point, Maryland; Radford, Virginia; Milan, Tennessee; Anniston, Alabama; and Redstone Arsenal, Alabama. Identified invasive and native plant species. Used GPS/GIS, digital photography, and other field methods to delineate invasive plant infestations. Ranked observed species by threat potential and made recommendations for control. 2003.

**Environmental Restoration Feasibility Study, Powderly Creek, Pennsylvania; USACE, Baltimore District.** Performed wetland vegetation field surveys for this environmental restoration feasibility study. Used Evaluation for Planned Wetlands ecologic modeling methodology to calculate functional values of degraded wetlands. Developed a planting plan to restore native vegetation to degraded wetland and upland habitats. 2002.

**Wetlands Baseline Surveys, USACE-Baltimore District, Prince Georges County, Maryland.** Assistant Investigator for contributing plant identifications to wetlands delineation and wetlands restoration design for the western branch of Prince Georges County. 2002.

**Vegetation Classification and Federally Endangered Species Surveys, U.S. Army, Holston Ammunition Plant, Tennessee.** Environmental Scientist for analyzing forest inventory data to classify vegetative communities according to the National Vegetation Classification System at the Holston Army Ammunition Plant. Conducted field surveys for federally listed Indiana Bat and Gray Bat. Coordinated field activities with subcontractor and other field staff. Made management recommendations for invasive species monitoring and control. 2001.

**Forest Vegetation Inventory, Aberdeen Proving Ground, Maryland.** Primary Investigator for identification of herbaceous plants in timber stands. Noted invasive species and compiled survey report. 2001.

**EDUCATION**

M.S. Environmental Science & Policy, Johns Hopkins University, Baltimore, MD; 2003

B.S. Earth & Environmental Science, Wilkes University, Wilkes-Barre, PA; 1996

**YEARS OF EXPERIENCE**

Total: 14

With Tetra Tech: 7

**LICENSES & CERTIFICATIONS**

Professional Wetland Scientist (#00001395), July 2003; Recertified December 2008

Certified Forest Stand Delineator and Conservation Planner in Maryland, September 2003

**PROFESSIONAL AFFILIATIONS**

Society of Wetland Scientists

Trout Unlimited

**KEY AREAS OF EXPERIENCE**

- Biological TMDL development
- Watershed assessment and planning
- Surface water quality assessment
- Watershed data management
- Data manipulation in GIS, MS Excel and MS Access
- Statistical data analysis
- Water quality modeling
- Public meeting facilitation
- Report documentation
- Riparian habitat ecology
- Aquatic ecology
- Wetland scientist
- Project management

Mr. Wilkes is an environmental scientist providing technical support for Source Water Protection Plan development for over 100 community public water systems for the West Virginia Department of Health and Human Services; Bureau for Public Health, Environmental Engineering Division. Mr. Wilkes also provides technical oversight during the development of Total Maximum Daily Loads (TMDL) to the West Virginia Department of Environmental Protection, Division of Water and Waste Management. His responsibilities include watershed data management, organization of the stressor identification process, modeling and assisting with the development of various TMDLs (iron, aluminum, manganese, selenium, pH, fecal coliform, acid deposition, and sediment) for the state of West Virginia. He communicates and coordinates with clients throughout the TMDL development process. He continues to assist with developing the input parameters for calibration and running the MDAS/LSPC watershed models. Mr. Wilkes has assisted in the statistical analysis of biological, chemical and physical data in the development of the Stressor Identification Report for biologically impacted streams in the Cheat River, Coal River, Elk River, Gauley River, James River, Lower Kanawha River, Little Kanawha River, North Branch Potomac River, Ohio River Watersheds, Upper and Lower New River, Greenbrier, and Potomac Direct Drains watersheds in West Virginia.

He has assisted in the development of numerous TMDL documents and provided technical support to the client in training sessions and various public meetings. Mr. Wilkes has accompanied WVDEP staff to locate and assess pollutant sources in various watersheds, assisted in the sediment storm sampling in Coalburg Hollow and Shrewsbury Hollow, and assisted in the trout iron and sediment modeling project.

In addition to TMDL development, Mr. Wilkes has assisted EPA by conducting landuse and data analysis during their development of *A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams* document. He has also been leading the project for developing a TMDL implementation plan for the Piney Creek Watershed, which encompasses the city of Beckley, WV.

**Selected Project Experience**

**Source Water Protection Plans, WV.** For the West Virginia Department of Health and Human Resources, Environmental Engineering Division, Mr. Wilkes conducted meetings with various public water system providers, assessed potential threats to drinking water sources, suggested preventative and mitigation strategies and developed complete source water protection plans. He has provided ongoing program and technical editorial support throughout the project.

**Piney Creek Watershed Implementation Plan, WV.** For the West Virginia, Department of Environmental Protection, Division of Water and Waste Management Non Point Source Program, Mr. Wilkes conducted coordination between the WVDEP and various stakeholders, including the Piney Creek Watershed Association, numerous Publicly Owned Treatment Works, National Park Service, various non-profit organizations, private landowners and concerned citizens. The implementation plan integrates pollutant reduction strategies required by the TMDLs for both point and nonpoint sources, such as abandoned mine lands, runoff from urban and non vegetated areas, and stream bank erosion throughout the watershed.

**USEPA Office of Research and Development, Cincinnati, OH.** Mr. Wilkes has supported the USEPA's Office of Research and Development in conducting data and GIS analysis for the macroinvertebrate and fish species response to elevated conductivity concentrations throughout West Virginia. Various GIS analysis of chemistry and landuse data were completed to provide documentation of potential impacts to macroinvertebrate and fish communities due to elevated conductivity. Results from the data analysis were used, in part by EPA to develop the document *A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams*.

**Trout Water Iron Modeling Project, WV.** For the West Virginia Department of Environmental Protection, Division of Water and Waste Management, Mr. Wilkes has been part of the field team collecting physical data for the model parameterization during the trout iron/sediment study. Watershed delineation, landuse assessment and landuse modification based on aerial photography were conducted for the sites being studied.

**TMDLs for Middle Ohio North and Middle Ohio South Watersheds, WV.** Mr. Wilkes provided oversight and QA/QC of the SI database and participated in the preliminary and final SI calls for 77 biological impaired streams which consisted of 829 sampling stations and 4,576 individual samples. The 77 biologically impaired streams data was reviewed and evaluated with WVDEP biologists to arrive at a consensus using best professional judgment on the aquatic stressors and TMDLs to be developed.

**TMDLs for Elk, Lower Kanawha, and North Branch Potomac Rivers, WV.** Mr. Wilkes provided input and oversight for the conversion from Microsoft Excel based worksheets to the development of the SI database in Microsoft Access. The SI database is designed to accept base data tables (chemistry, macroinvertebrate, rapid bioassessment parameters and qualitative sampler comments) directly from WVDEP's WAB database. Once imported, the base data is normalized and analyzed by both biologically impaired stream and individual sampling stations on biologically impaired streams. This tool was used to assess the biological impairments for 101 streams, which consisted of 1,299 sampling stations and 8,054 individual samples. The design of this database also allowed for full integration into WVDEP's Oracle data structure.

**TMDLs for Cheat River, Camp Creek of Twelvepole and Dunkard Creek, Greenbrier, James, Little Kanawha, Youghiogheny and New Rivers, WV.** Mr. Wilkes coordinated and oversaw all aspects of the watershed delineations and biological Stressor Identification process. He communicated regularly with the clients to incorporate new data such as the sediment layer profile and to incorporate a data averaging calculation into the SI summary sheet. He continues to work with the TMDL team to improve the quality of the TMDL modeling approaches and efficiency. Mr. Wilkes has been responsible for incorporating the final public and EPA comments into the TMDL documents and producing the final versions for publication.

**TMDLs for Gauley River and Potomac Direct Drains Watersheds, WV.** Mr. Wilkes performed the watershed delineation for the Potomac Direct Drains watershed, which was used in the LSPC model. He also provided oversight and guidance throughout the SI development process including meeting the deliverable schedule for submitting the watershed delineations, SI deliverable and pollutant source report. Mr. Wilkes calibrated the hydrology and water quality parameters for the LSPC fecal coliform model. He performed all the modeling scenarios and completed allocations during the fecal coliform modeling. The fecal coliform allocation database was updated to generate the final publishable fecal coliform TMDL tables for the report. Mr. Wilkes corresponds regularly with the client to obtain comments on deliverables, such as the pollutant source report, SI, preliminary draft report documents, and allocations.