



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
DEP15456

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
CHUCK BOWMAN 304-558-2157

VENDOR

\*313093713      518-346-0225  
 WATERSHED ASSESSMENT ASSOCIATE  
 28 YATES ST  
  
 SCHENECTADY NY 12305

SHIP TO

ENVIRONMENTAL PROTECTION,  
 DEPARTMENT OF  
 DIV OF WATER AND WASTE MGT  
 601 57TH STREET SE  
 CHARLESTON, WV  
 25304      304-926-0499

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
05/26/2011				
BID OPENING DATE: 06/23/2011		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		961-48		
FIELD TESTING SERVICES  THE WEST VIRGINIA PURCHASING DIVISION, FOR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FROM QUALIFIED VENDORS FOR A CONTRACT TO PROVIDE PROCESSING AND IDENTIFICATION OF BENTHIC MACROINVERTEBRATE SAMPLES COLLECTED FROM WEST VIRGINIA WATERS, PER THE FOLLOWING SPECIFICATIONS, BID REQUIREMENTS, TERMS & CONDITIONS, AND THE ATTACHED BID SCHEDULE.  EXHIBIT 3  LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.  UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.  RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30)						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE 518 346 0225	DATE 6/22/11
TITLE <i>[Signature]</i>	FEIN 20 8923885	ADDRESS CHANGES TO BE NOTED ABOVE

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

**GENERAL TERMS & CONDITIONS**  
**REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at [www.state.wv.us/admin/purchase/vrc/hipaa.htm](http://www.state.wv.us/admin/purchase/vrc/hipaa.htm) and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or Fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

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**INSTRUCTIONS TO BIDDERS**

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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 Department of Administration  
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<p>DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES: QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE 518 346 0225	DATE 6/22/11
TITLE President	FEIN 20 842 3885	ADDRESS CHANGES TO BE NOTED ABOVE

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				AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM. REV. 05/26/2009		
				NOTICE A SIGNED BID MUST BE SUBMITTED TO: DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130		
				THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED: SEALED BID BUYER:      CB-23 RFQ. NO.:      DEP15456 BID OPENING DATE:      06/23/2011 BID OPENING TIME:      1:30 PM PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: 518 630 5078		
				CONTACT PERSON (PLEASE PRINT CLEARLY): John Kelly Nolan		

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>John Kelly Nolan</i>	TELEPHONE 518 346 0225	DATE 6/22/11
TITLE President	FEIN 20 8923885	ADDRESS CHANGES TO BE NOTED ABOVE

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

Watershed Assessment Associates **WAA**  
Environmental Services / Biomonitoring / Invertebrate Taxonomy / Professional Training

Mr. Chuck Bowman  
Department of Environmental Protection  
Office of Water Resources  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

June 20, 2011

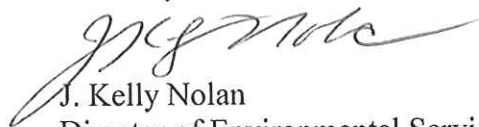
Dear Mr. Bowman:

Watershed Assessment Associates is pleased to submit the enclosed proposal (RFQ: DEP 15456) to provide taxonomy services to the West Virginia Department of Environmental Protection Division of Water and Waste Management. The DWWM is seeking professional benthic macroinvertebrate identification and enumeration of samples collected by the DEP. It requires a laboratory with dedicated, certified taxonomists and the capacity of processing large numbers of macroinvertebrates.

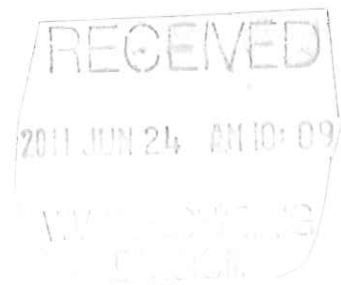
Watershed Assessment Associates (WAA) is able to offer the West Virginia DEP the professional expertise that it requires to complete this project. Our highly skilled, experienced taxonomists have a reputation for attention to detail, meticulous documentation, reliability, and timeliness. Only our certified taxonomists will sort, identify, and enumerate the DEP samples. We follow strict quality control and are able to provide the expert legal testimony that the DEP might require.

We are eager to work with DWWM on this project, and will provide the DWWM with the level of expertise and commitment necessary to successfully complete its biomonitoring work.

Sincerely,



J. Kelly Nolan  
Director of Environmental Services  
Watershed Assessment Associates



DEP15456  
 BID SHEET

Item No.	Quantity	Description	Unit Price	Amount
A	500	Per sample un-sorted, identified to Genus level: 200-organism subsample	\$138.50	\$69,250
E	4	Per each "sample pick-up/delivery" not "per sample" (Assume 100 samples per pickup)	0.00	\$0.00
F	5 hr	Cost/hour for professional staff representation of data in legal/administrative setting	75.00	\$375.00

TOTAL = \$69,625

Contractor: Watershed Assessment Associates

Signature: 

Date: 6/22/11

Quantities listed on the bid schedule are for bid evaluation purposes only and are not a guarantee of quantities to be ordered over the life of the contract. Actual quantities ordered may be more or less than those stated on this schedule.

## Benthic Macroinvertebrate Sample Processing and Identification for the State of West Virginia RFQ DEP 15456

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Response to RFQ DEP 15456 June, 2011

Submitted by: Watershed Assessment Associates  
28 Yates St.  
Schenectady, NY 12305  
Phone: 518-346-0225 Fax: 518-630-5078  
Web: [www.rwaa.us](http://www.rwaa.us)

Project Contact: J. Kelly Nolan, Director of Environmental Services  
Email: [jkn@rwaa.us](mailto:jkn@rwaa.us)

### Project Overview and Management

The West Virginia Department of Environmental Protection (DEP) Division of Water and Waste Management (DWWM) requires qualified taxonomists to process and identify benthic macroinvertebrate samples collected primarily from riffle/run habitats of West Virginia waters. Legal action based upon the benthic macroinvertebrate identification results is possible, and therefore the DEP requires strict quality control measures.

Watershed Assessment Associates (WAA) is an environmental consulting firm with the qualified personnel, experience, and meticulous attention to detail that the West Virginia DEP DWWM requires. The manager for this project will be J. Kelly Nolan, Director of Environmental Services and senior taxonomist. Mr. Nolan will oversee all aspects of the project, including specimen pickup from the DEP DWWM; adherence to, and documentation of, strict chain of custody; receipt of specimens at the WAA laboratory; sample sorting, which will be performed solely by the certified taxonomists identified in this proposal using DEP protocol; macroinvertebrate identification, performed by the experienced, certified taxonomists identified in this proposal using DEP protocol; QA/QC, including strict sorting and identification quality control; accuracy of bench sheets and computerized data sheets; creation of voucher and reference collections; and return of all required materials to DEP DWWM.

### Company Qualifications

Watershed Assessment Associates (WAA) is a woman-owned environmental consulting firm that has been providing water quality and benthic macroinvertebrate taxonomy services to state and county agencies, environmental organizations, institutions, and private consulting companies since 1998. Our 2800 square foot facility houses 2 macroinvertebrate processing laboratories, a separate washing/processing room, high grade dissecting and compound microscopes, fiberoptic light sources, all necessary equipment for benthic macroinvertebrate taxonomy (including fine-tipped forceps and probes, Petri dishes, 75% or greater ethanol, wash bottles, microscope slides and glass covers, CMCP-10 mounting medium, dry oven and fume hoods), computerized lab data sheets and centralized internal sample tracking system, and an extensive library of appropriate aquatic keys and references, including computer access to collegiate library references.

**Benthic Macroinvertebrate Sample Processing and Identification  
for the State of West Virginia RFQ DEP 15456**

WAA is capable of processing 140-180 samples monthly, and we have ample capacity to process the West Virginia samples. Following are a selection of taxonomy projects completed by WAA.

Date	Project Name	Samples Processed	Project Description	Contact
2010	Vermont National Lake Assessment Program	88	Taxonomic identification of Vermont lakes aquatic macroinvertebrate samples as part of the National Lake Assessment (NLA) Program.	Vermont DEC 103 S. Main St. Waterbury, VT 05671-0409 Contact: Steve Fiske 802-241-1378
2010	Lake Champlain Benthic Macroinvertebrate Survey	93	Sorting, identification and enumeration of benthic macroinvertebrates collected by Van Veen sampler from Lake Champlain and Champlain Canal.	Tetra Tech 451Presumpscot St. Portland, ME 04103 Contact: Brian Dresser 603-314-0756
2010	Great Lakes (Canada)	170	Sorting, identification and enumeration of benthic macroinvertebrates collected from Canadian Great Lakes for Environment Canada.	Subcontractor for: ESC Box 11437 Blacksburg, VA 24062 Contact: Stuart Lynde 540-552-0144
2009	NY DEC QA/QC	40	QA/QC on 40 samples; calculation of PTD and PTE and reporting per NYS DEC SBU protocol, including a summary report	NY DEC SBU 425 Jordan Rd. Troy, NY 12180 Contact: Alexander Smith 518-285-5627
2008	New York State Wadeable Stream Nutrient Criteria Project	100	Collection, sorting, identification and enumeration of benthic macroinvertebrates, analysis, interpretation, and reporting of biotic and abiotic variables from throughout NYS.	The Academy of Natural Sciences (Agent for NYS DEC) 19 <sup>th</sup> and Parkway, Logan Square Philadelphia, PA 19103 Contact: Roger Thomas 215-299-1105
2008	Pennsylvania DEP Macroinvertebrate Project	67	Sorting, identification and enumeration of 67 samples from the Alleghany and Monongahela Rivers .The subsample target was 400. Benthic macroinvertebrate identification to lowest possible taxonomic level (genus/species) included chironomidae and oligochaetes.	Pennsylvania DEP, Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222 Contact: Rick Spears 412-442-5874
2004-present	Orange County, NY Biomonitoring Water Quality Project	180	Collection, sorting, identification, enumeration, analysis, interpretation, and reporting of biotic and abiotic variables for OCWA's annual countywide biological stream monitoring program.	Orange County Water Authority 99 Main Street, Suite 1 Goshen, New York 10924 Contact: David Church 845- 615-3840
2006-present	Rockland County, NY Biomonitoring Water Quality Project	100	Collection, sorting, identification, enumeration, analysis and interpretation, and reporting of biotic and abiotic variables collected annually in Rockland County streams.	Rockland County SWCD 50 Sanatorium Rd., Bldg. P Pomona, NY 10970 Contact: Mary Hegarty 845-364-2669
2003-present	Battenkill Watershed (NY) Assessment	240	Collection, identification, enumeration, analysis and interpretation, and reporting of biotic and abiotic variables.	Battenkill Conservancy P.O. Box 327 Cambridge, NY 12816 Contact: Stuart Bartow 518-854-3355



Benthic Macroinvertebrate Sample Processing and Identification  
for the State of West Virginia RFQ DEP 15456

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Staff Qualifications

All benthic macroinvertebrate processing and identification for the WV DEP DWWM will be performed by the experienced, certified benthic macroinvertebrate taxonomists listed in this response. *We will not use sorting technicians at any time during this contract.* WAA personnel assigned to this project are degreed biologists and dedicated taxonomists with multiple certifications from the North American Benthological Society, and more than 10 years of experience in the sorting, identification and enumeration of benthic macroinvertebrates. They also routinely train professionals in benthic macroinvertebrate taxonomy. If necessary, the project taxonomists will be available to attend legal proceedings and provide expert testimony regarding work performed for this project. Resumes and North American Benthological Society (NABS) certifications are attached to this document.

**WV DEP DWWM Benthic Macroinvertebrate Processing and Identification Project  
Taxonomist certifications/length of time working with benthic macroinvertebrates**

Taxonomist	Years of Experience Identifying Benthic Macroinvertebrates	NABS Certifications/Regions	Certification Date
J. Kelly Nolan	13 years	EPT Genus Level/Eastern North America	2006
		EPT Genus Level/Western North America	2009
		Chironomidae Genus Level/Eastern North America	2008
		Chironomidae Genus Level/Western North America	2009
Christopher Fishel	16 years	EPT Genus Level/Eastern North America	2007
		EPT Genus Level/Western North America	2007
		General Arthropods Genus Level/Eastern North America	2009
		General Arthropods Genus Level/Western North America	2009
		Oligochaeta Genus Level/North America	2009

Deliverables

Completed results will be delivered to the WV DEP/DWWM on the following schedule:

- Samples submitted by 4/1 will be delivered by 8/31
- Samples submitted by 8/31 will be delivered by 12/1
- Samples submitted by 12/31 will be delivered by 2/28
- Results of smaller, site-specific projects will be delivered within 1 month of sample receipt or within another negotiated time period

Submissions will include the following for each sample:

- Benthic macroinvertebrate identifications reported in MS Excel or Access on a data template provided by the DWWM Watershed Assessment Branch (WAB)
- Copies of bench sheets completed during identifications
- All organisms identified (except reference taxa specimens, which will be returned when the contract or project is complete)
- All QA/QC information associated with sorting and identification of the samples

## Benthic Macroinvertebrate Sample Processing and Identification for the State of West Virginia RFQ DEP 15456

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### Scope of Work

Watershed Assessment Associates recognizes the importance meticulous attention to quality control in completing this project. We will maintain strict quality control measures in all phases of this project, including maintaining chain of custody, transportation and processing of samples (sorting, identification, enumeration), and reporting.

#### **Step 1: Receipt of sample at specified location**

Watershed Assessment Associates will pick up and return specimens collected by the DWWM from a specified facility in Charleston, WV. WAA acknowledges that sample containers will be 1 gallon jars and that the total number of samples collected annually will be approximately 500. WAA will anticipate and schedule 4-5 sample pick-ups yearly, transport the specimens to our laboratory, and maintain a strict chain of custody for the specimens.

Upon receipt, samples will be checked against the chain of custody, recorded in the sample log book, and assigned a unique sample tracking number. Any discrepancies in sample information will be noted and DWWM will be contacted by phone or electronically regarding such discrepancies. All field samples will also be checked for proper preservation and re-preserved in 75% ethanol if found to be less than adequately preserved. Any vials received leaking or broken will be replaced, and noted in the sample log book. A copy of the chain of custody will be retained by Watershed Assessment Associates.

Watershed Assessment Associates will maintain a record of the identification results for 5 years.

#### **Step 2: Sorting benthic macroinvertebrate samples**

Watershed Assessment Associates recognizes the significance of appropriate and accurate sorting of macroinvertebrates from benthic survey samples in order to generate accurate, meaningful study data and conclusions. Because of this, only the certified taxonomists listed in this proposal will sort the DEP DWWM specimens. *We will not use sorting technicians at any time during this contract.* We feel strongly that using experienced, certified taxonomists during the sorting process will provide added-value to the DWWM study results.

Our taxonomists will follow the procedures outlined in the WV DEP Watershed Assessment Branch-Standard Operating Procedures for Processing Benthic Macroinvertebrate Samples, as follows:

- For the majority of samples: 200 (+/- 20%) a subsample of benthic macroinvertebrate organisms will be removed from a sample. Any vertebrates encountered during subsampling will be retained with the sample, but not identified. Specimens will be stored in appropriate jars with screw caps.
- Occasionally, the entire sample will need to be sorted and identified. The DEP DWWM will notify WAA of these special cases.
- As part of a thorough QA/QC process, WAA will examine sorting efficiency for 5% of all submitted samples, and follow a robust QA/QC process, as described in the QA/QC section.
- Our taxonomists are fully knowledgeable of M.T. Barbour et al.'s "Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and

## Benthic Macroinvertebrate Sample Processing and Identification for the State of West Virginia RFQ DEP 15456

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Fish,” and routinely use these protocols for stream bioassessments. Macroinvertebrate specimens will be processed by the taxonomists listed in this proposal using the DWWM protocol derived from this publication (as outlined in RFQ DEP 15456) with the following exception:

Bottle labels are generated by computer on 28 pound stock paper. The improved legibility of these labels enhances quality assurance. The only handwritten parts of the label are the initials of the sample processor, the number of grids sorted, and the number of organisms in the final sample. These are recorded using archival quality indelible ink pens.

### **Step 3: Identification of Benthic Macroinvertebrates**

The benthic macroinvertebrate samples will be identified in accordance with procedures outlined in “Standard Operating Procedures for Identifying Macroinvertebrate Samples” with the following exceptions:

1. The number of organisms in each taxon is entered directly into an electronic database, dispensing with the need for handwritten bench sheets, unless required by the WV DEP.
2. WAA uses CMCP-10 mounting media for the mounting of Chironomidae.

Only the dedicated, NABs-certified taxonomists listed in this proposal will identify specimens. All Chironomidae larvae will be identified to genus by the taxonomist listed in this proposal with NABS certification in chironomidae.

All aquatic insects (including Diptera), crustaceans, and mollusks will be identified to genus-level. *Hydropsyche* individuals will be separated into *Hydropsyche* versus *Ceratopsyche*, according to Merritt, Cummins, and Berg (2008). Oligochaeta, Turbellaria, and Hirudinea will be identified to family level. Nemertea, Nematoda, and Bryozoa will be identified to phylum and Hydroida to order. Mature specimens may be identified to a lower level, if possible. Vertebrates and terrestrial organisms will not be identified.

Watershed Assessment Associates has included a complete bibliography of publications used by our taxonomists for the identification of specimens at the end of this response. Our laboratory utilizes most of the references listed in the attached operating procedure and has access to a collegiate reference library, if needed. WAA will provide a bibliography of publications used in the identification of specimens to DEP DWWM.

WAA will create a reference collection for DEP DWWM and a voucher collection of all specimens in the 200 organism subsample that have not been included in the reference collection.

Macroinvertebrate identification results (no analysis will be performed, per WV DEP) on the paper form styles provided by DEP DWWM, and in electronic format (Microsoft excel or Access using the template provided by WVDEP), voucher specimens, and WV DEP WAB benthic macroinvertebrate lab sheets will be submitted to the DEP DWWM. All QA/QC associated with sorting and identification will also be submitted with the results.

## Benthic Macroinvertebrate Sample Processing and Identification for the State of West Virginia RFQ DEP 15456

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WAA will maintain preservation of the samples and will return all sample jars, voucher specimens, and reference collections to the DEP DWWM. Unless directed otherwise by WV DEP, unused sample residues will be disposed by WAA.

### **Step 4: Quality Control**

Quality assurance and quality control is of paramount importance to our work. Rigorous QA/QC measures are followed by all of our taxonomists, including the following:

#### Reference and voucher collections

- WAA will retain all voucher specimens and establish reference collections for the project. Reference collections will be arranged/curated based on taxonomic and/or phylogenetic order
- Any specimens removed from the voucher collection for purposes of building the reference collection will be documented on paper and electronic reporting forms.
- The reference taxa specimens will be delivered to the DEP DWWM at the end of the contract/project period, or upon request if desired earlier.
- Retention of specimens for any purpose will be fully documented on laboratory bench sheets.
- WAA will compile genus-level reference and voucher collections for submission to DEP DWWM at the end of the contract period or upon request for DEP DWWM use.
- All specimens identified in the 200-organism subsample will be returned to DEP DWWM. Slide mounted specimens will be labeled to indicate, at a minimum, DEP sample ID, lab number, count of organisms on the slide, and general groupings of organisms (e.g. Chironomidae, Oligochaeta). All other organisms will be stored in a single sample vial.

#### Sorting QA/QC

- The certified taxonomists listed in this proposal will sort all the DWWM specimens to ensure the highest sorting efficacy.
- 5% of the specimens from each taxonomist are resorted to ensure a 90% sorting efficacy.
- If less than 90% sorting efficacy is discovered, the sample is resorted. The sample then undergoes a *second* quality assurance re-evaluation.
- A record of all samples sorted, a list of quality control checks, and documentation of any corrective action taken will be maintained by WAA to document the process. The information will be provided each time the taxonomic results are submitted to DEP DWWM.

#### Identification QA/QC

- 5% of each taxonomist's samples will be randomly selected for re-identification by a second taxonomist listed in this proposal.
- Any errors will be brought to the attention of the original taxonomists and subsequent identifications will be subject to scrutiny until errors are resolved.
- A record of all samples re-identified, a list of quality control checks, and documentation of any corrective action will be maintained by WAA to document the process. All reports documenting QA/QC will be submitted to DEP DWWM with all other completed results in the delivery group or upon request.

## Benthic Macroinvertebrate Sample Processing and Identification for the State of West Virginia RFQ DEP 15456

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- We maintain professional contacts with numerous research taxonomists and systematists for taxonomic verification of unusual or rare specimens. Any uncertain or unusual taxa will be sent to one or more of these experts for verification. All samples subject to outside verification will be recorded in the QA/QC report..
- If any significant changes in taxonomy occur during the life of this contract, the vendor shall notify DWWM and provide supporting references.
- We will anticipate that DEP biologists and/or another contract laboratory will verify identifications for a minimum of 2.5% of the samples, selected randomly from all proposal taxonomists.

### Step 4- Legal Testimony

The taxonomists completing the work for this project will be prepared to legally testify, if necessary, to the time of notification by the DEP DWWM of sample shipment and by whom, condition of the sample, how the sample was preserved by the firm, dates of analysis and by whom, chain of custody procedures within the laboratory, methods used, and results of sorting, identification, and internal QA/QC processes.

The taxonomists will not be required to respond to, nor will they respond to, questions concerning the interpretation of results.

### Subcontractors

Watershed Assessment Associates will be solely responsible for the satisfactory completion of this contract. We are not subcontracting the project. Any unforeseen changes in project staff would be submitted to DEP DWWM by WAA for review and approval.

### Confidentiality

Any and all data, analyses, materials, reports and other oral/written information prepared by Watershed Assessment Associates with respect to this requisition shall, except for information that has been made publicly available, be treated as confidential and shall not be utilized, released, published, or disclosed, by WAA at any time for any purpose whatsoever other than to provide consultation or other service to the DWWM.

### List of taxonomic references

Benthic Macroinvertebrate Sample Processing and Identification  
for the State of West Virginia RFQ DEP 15456

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**SUMMARY OF QUALIFICATIONS**

Experienced field biologist, skilled aquatic macroinvertebrate taxonomist, and innovative educator who excels as the Director of Environmental Services at Watershed Assessment Associates. Manages projects from inception to completion, coordinates and supervises field operations, directs laboratory operations, and maintains both field and laboratory quality control. Areas of expertise include watershed assessments, stream biomonitoring, benthic macroinvertebrate taxonomy, development of diverse professional programs related to biomonitoring and taxonomy.

**EDUCATION**

<b>Bachelor of Science, Biology</b>	<b>2005</b>
State University of New York at Albany, Albany, New York	
<b>Associates in Applied Science</b>	<b>1986</b>
SUNY Adirondack Community College, Queensbury, New York	
<b>Bachelor of Arts</b>	<b>1983</b>
Mississippi College, Clinton, Mississippi	

**CERTIFICATIONS**

North American Benthological Society certified Level II, Group II, Eastern and Western EPT  
 North American Benthological Society certified Level II, Group III, Eastern and Western Chironomidae

**RELEVANT WORK EXPERIENCE**

Taxonomy; QA/QC for West Virginia and Massachusetts Department of Environmental Protection

- Performed benthic macroinvertebrate taxonomy for the statewide Massachusetts biomonitoring water quality program
- Provided QA/QC for macroinvertebrate taxonomy
- Contact: Robert Nuzzo 508-767-2809

Field biologist/taxonomist for Academy of Natural Sciences (agent of NYS Department of Environmental Conservation) 7/08-2/09

- Project objective was to aid development of biotic nutrient criteria for wadeable streams and rivers
- Involved collection and analysis of data from 100 wadeable streams and rivers throughout the NY state
- Contact: Roger Thomas, The Patrick Center for Environmental Research, Academy of Natural Sciences 215-299-1105

Taxonomist for Pennsylvania Department of Environmental Protection 7/08-4/09

- Project evaluated macroinvertebrate specimens for the EMAP-GRE grant for the PA DEP southwest regional office
- Contact: Rick Spear 412-600-3943

Field Biologist/Taxonomist for National Oceanic and Atmospheric Administration (NOAA) 8/08-present

- Sediment toxicity pilot study for the Hudson River Natural Resource Damage Assessment
- Contact: Ann Jones 617-354-0074

Field Biologist/Taxonomist for Vermont Department of Environmental Conservation 2008

- Project assessed numerous previously unassessed streams in the Battenkill, Walloomsac, and Hoosic Watersheds
- Contact: Steve Fiske 802-241-1378

### **CONTINUING EDUCATION**

Aquatic Algae and Diatom Identification Workshop	8/08
Advanced Identification Workshop on Baetidae and Hydropsychidae	3/07
PRIMER-E multivariate statistics for ecologist workshop	3/07
Chironomidae Taxonomy Workshop	5/06
Advanced Midge Taxonomy Workshop	3/05
Macroinvertebrate Laboratory Quality Assurance Workshop	3/05
EPT taxa workshop Humboldt Field Research Institute	5/03
Hach Technical Training Applied Analytical Chemistry workshop	6/00
River Network Clean Water Act workshop	9/99

### **MEMBERSHIPS**

North American Benthological Society  
Association for the Protection of the Adirondacks  
Black Rock Forest  
Leadership Schenectady (1998 graduate)

**SUMMARY OF QUALIFICATIONS**

Experienced professional aquatic macroinvertebrate taxonomist leads laboratory sample processing and identification as the Senior Aquatic Taxonomist at Watershed Assessment Associates. Manages laboratory projects and curates the Watershed Assessment Associates Reference Collection; well versed and abreast of changes in taxonomic nomenclature. Areas of taxonomic expertise include all aquatic Phyla with extensive experience throughout North America.

**EDUCATION**

<b>Bachelor of Science, Entomology</b>	<b>2000</b>
Cornell University, Ithaca, New York	
<b>Associates of Science, Ecology, Environmental Technology, Limnology</b>	<b>1995</b>
Paul Smith's College, Paul Smiths, New York	

**CERTIFICATIONS**

North American Benthological Society certified Level II, Group I, Eastern and Western Arthropods  
 North American Benthological Society certified Level II, Group II, Eastern and Western EPT  
 North American Benthological Society certified Level II, Group IV, Oligochaeta

**RELEVANT WORK EXPERIENCE**

**Senior Aquatic Taxonomist, Watershed Assessment Associates, NY** 07/09 – present

- Processed hundreds of samples from NY, VT, MA, PA (PADEP – Allegheny & Monongahela Rivers)
- Oversee daily lab functions, curator of WAA reference collection
- Manage lab/field technicians, perform field bio-assessment duties, taxonomic workshop instructor

**Senior Aquatic Taxonomist, EcoAnalysts Inc., ID** 01/06-07/09

- Expert in all North American aquatic fauna; Assistant Curator of EcoAnalysts Reference collection, adding multiple new taxa
- Identified samples from all EPA ecoregions as part of the EPA National Lakes Assessment
- Processed thousands of samples from Northwest (ID, WA, OR), Southwest (AZ, NM, NV, CA), Southeast (TX, LA, FL, NC, VA, KY, WV) and Northeast (NY, PA, NJ, CT) US as well as Canada (ON, PQ, MB, BC)
- Performed taxonomic identifications for AZ DEQ (2006-2009), NV DEP (2006-2009), ID DEQ(2006-2008), NM DEQ (2006-2008), CT DEP(2006-2009)
- Identified over 100 samples from Delaware River Watershed for Delaware River Basin Commission (DRBC) to genus/species level
- Performed numerous bio-assessment field duties
- Trained fellow taxonomists/perspective taxonomists in aquatic entomology
- Pioneered successful new recruitment methods for acquiring future employees; established new company protocols to improve efficiency in taxonomy department

**Production Taxonomist – temporary**, Insect Ecologists, ID 09/07-11/07

- Processed over 200 pitfall trap samples from Northern ID and MT; identified thousands of specimens to family/genus/species level

**Freelance Production Taxonomist**, Cornell University/NSF Grants, Various 1998-2006

- Processed thousands of samples from New York, Colorado and Idaho.
- Identified hundreds of thousands of specimens to genus/species level.
- Performed bio-assessment field duties in New York and Colorado

**Fisheries Technician**, NYS Dept. of Environmental Conservation, NY 1995-1997

- Performed various field sampling duties including electro-fishing and the usage of various types of capture nets.
- Performed creel census duties; assisted in various endangered fish species surveys

### MEMBERSHIPS

North American Benthological Society  
Connecticut Entomological Society  
Trout Unlimited

### ADDITIONAL SKILLS

- Extensive knowledge of aquatic macroinvertebrate taxa; excellent knowledge of terrestrial insects
- Excellent working knowledge of many taxonomic keys and references
- Experienced Curator of professional/large personal collection
- Familiar with Microsoft Excel, Access, Word
- Excellent self-motivational skills; extreme passion about insects, especially aquatic EPT taxa
- Experienced utilizing electrofishing (boat & backpack), seines, kick nets, gill nets, trap nets, and plankton net gears
- Proficient with various aquatic macroinvertebrate field sampling and sub-sampling techniques

# TAXONOMIC Certification

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*This certificate is awarded to*

*J. KELLY NOLAN*

*in recognition of the successful completion for  
Level 2 Group 2 Eastern Ephemeroptera, Plecoptera & Trichoptera*

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Trevor Reynoldson

May, 2006  
Date

# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***KELLY NOLAN***

*In recognition of excellence for specimen identification to Genus*  
**WESTERN**  
**EPHEMEROPTERA, PLECOPTERA and TRICHOPTERA**  
**NORTH AMERICAN BENTHOLOGICAL SOCIETY**

  
\_\_\_\_\_  
Dr. Murray Kelly

Date

February, 2009

# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***KELLY NOLAN***

*in recognition of the successful completion for*

*LEVEL 2 GROUP 3 EASTERN CHIRONOMIDAE*

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**



Dr. Trevor Reynoldson

February 2008

Date

# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***JOHN KELLY NOLAN***

*In recognition of excellence for specimen identification to Genus  
Western Chironomidae*

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**

  
Dr. Martin Colbo

Date

November, 2009



# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***CHRISTOPHER FISHEL***

*In recognition of excellence for specimen identification to Genus*

*Eastern & Western*

*Ephemeroptera, Plecoptera & Trichoptera*

NORTH AMERICAN BENTHOLOGICAL SOCIETY



Dr. Murray Colbo

February 2007

Date

# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***CHRISTOPHER FISHEL***

*In recognition of excellence for specimen identification to Genus*

***Eastern General Arthropods***

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**



Dr. Macrav Colbo

November, 2009

Date

# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***CHRISTOPHER FISHEL***

*In recognition of excellence for specimen identification to Genus*

*Western General Arthropods*

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**

  
\_\_\_\_\_  
Dr. Murray Colpe

Date

November, 2009

# TAXONOMIC CERTIFICATION

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*This certificate is awarded to*

***CHRISTOPHER FISHEL***

*In recognition of excellence for specimen identification to Genus*

***Oligochaeta***

**NORTH AMERICAN BENTHOLOGICAL SOCIETY**



Dr. Nancy Colbo

Date

November, 2009