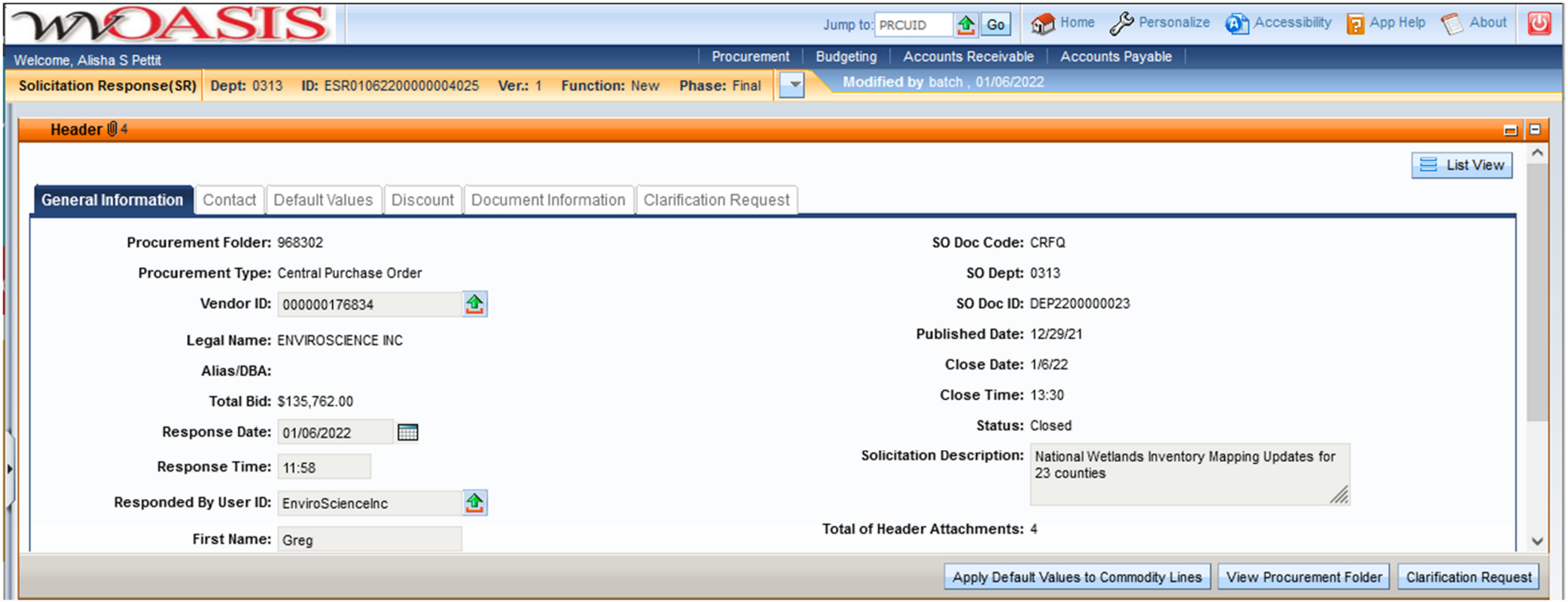
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


wvOASIS
Jump to: PRCUID Go
Home
Personalize
Accessibility
App Help
About
Welcome, Alisha S Pettit
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 0313 ID: ESR01062200000004025 Ver.: 1 Function: New Phase: Final
Modified by batch , 01/06/2022
Header 4
List View
General Information
Contact
Default Values
Discount
Document Information
Clarification Request
Procurement Folder: 968302
Procurement Type: Central Purchase Order
Vendor ID: 000000176834
Legal Name: ENVIROSCIENCE INC
Alias/DBA:
Total Bid: $135,762.00
Response Date: 01/06/2022
Response Time: 11:58
Responded By User ID: EnviroScienceInc
First Name: Greg
SO Doc Code: CRFQ
SO Dept: 0313
SO Doc ID: DEP2200000023
Published Date: 12/29/21
Close Date: 1/6/22
Close Time: 13:30
Status: Closed
Solicitation Description: National Wetlands Inventory Mapping Updates for 23 counties
Total of Header Attachments: 4
Apply Default Values to Commodity Lines
View Procurement Folder
Clarification Request

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

State of West Virginia
Solicitation Response

Proc Folder:	968302
Solicitation Description:	National Wetlands Inventory Mapping Updates for 23 counties
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2022-01-06 13:30	SR 0313 ESR01062200000004025	1

VENDOR

000000176834
ENVIROSCIENCE INC

Solicitation Number: CRFQ 0313 DEP2200000023

Total Bid: 135762 **Response Date:** 2022-01-06 **Response Time:** 11:58:38

Comments:

FOR INFORMATION CONTACT THE BUYER
Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor
Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	NWI Wetlands Data for 23 WV counties				135762.00

Comm Code	Manufacturer	Specification	Model #
81151601			

Commodity Line Comments: Counties 23 x per county Unit price $5,902.70 Total Cost = $135,762.10

Extended Description:

NWI Wetlands Data will be created for 23 counties in WV as shown on Attachment A in the Specifications

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

State of West Virginia
Centralized Request for Quote
Service - Prof

Proc Folder: 968302 **Doc Description:** National Wetlands Inventory Mapping Updates for 23 counties **Proc Type:** Central Purchase Order			**Reason for Modification:**
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2021-12-15	2022-01-06 13:30	CRFQ 0313 DEP2200000023	1

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code: WVOASIS Headquarters Account Code: 000000176834

Vendor Name : EnviroScience, Inc.

Address : 5070 Stow Road (Note we have a Morgantown, WV office that will complete a portion of the work)

Street :

City : Stow

State : OH **Country :** USA **Zip :** 44224

Principal Contact : Greg Zimmerman,, V.P.

Vendor Contact Phone: 800-940-4025 **Extension:** 232

FOR INFORMATION CONTACT THE BUYER

Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Gregory F. Zimmerman

Vendor Signature X **FEIN#** 341603505 **DATE** 1/6/2022

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection, Division of Water and Waste Management, to establish a contract for National Wetlands Inventory Mapping Updates for 23 West Virginia counties per the attached specifications and terms and conditions.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION		ENVIRONMENTAL PROTECTION	
DIV OF WASTE AND WATER MGT		DIVISION OF WATER AND WASTE MGT	
601 57TH ST SE		601 57TH ST SE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	NWI Wetlands Data for 23 WV counties	23	County	$5902	$135,746

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description:
NWI Wetlands Data will be created for 23 counties in WV as shown on Attachment A in the Specifications

SCHEDULE OF EVENTS

Line	Event	Event Date

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

☑ A pre-bid meeting will not be held prior to bid opening

☐ A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting

are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: 12/27/2021 @ 4:00 PM ET

Submit Questions to: Josh Hager
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-4115 (Vendors should not use this fax number for bid submission)
Email: Joseph.E.HagerIII@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via e-mail. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the Purchasing Division.:

SEALED BID: National Welands Inventory Mapping Updates for 23 Counties
BUYER: Josh Hager
SOLICITATION NO.: CRFQ 0313 DEP2200000023
BID OPENING DATE: See next page
BID OPENING TIME: See next page
FAX NUMBER: 304-558-3970

The Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to a Request for Proposal is not permitted in wvOASIS.

For Request For Proposal ("RFP") Responses Only: In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal prior to the bid opening date and time identified in Section 7 below, plus NA convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should clearly identify and segregate the cost proposal from the technical proposal in a separately sealed envelope.

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: 01/06/2022 @ 1:30 PM ET

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

☐ This Solicitation is based upon a standardized commodity established under W. Va. Code §

5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the $125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at:
http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in

accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires, and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform or lacks the integrity and reliability to assure good-faith performance."

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b."

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. INTERESTED PARTY DISCLOSURE: West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least $1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national

or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

23. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

24. E-MAIL NOTIFICATION OF AWARD: The Purchasing Division will attempt to provide bidders with e-mail notification of contract award when a solicitation that the bidder participated in has been awarded. For notification purposes, bidders must provide the Purchasing Division with a valid email address in the bid response. Bidders may also monitor wvOASIS or the Purchasing Division's website to determine when a contract has been awarded.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or **"Agencies"** means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or **"Proposal"** means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☐ **Term Contract**

Initial Contract Term: This Contract becomes effective on _____and the initial contract term extends until _____.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☑ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within 638 days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for _____ year(s) thereafter.

☐ **One Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☐ **Other:** See attached _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☐ **Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. 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.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☑ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.

☐ **BID BOND (Construction Only):** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

☐ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award.

☐ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under $100,000. Personal or business checks are not acceptable. Notwithstanding the foregoing, West Virginia Code § 5-22-1 (d) mandates that a vendor provide a performance and labor/material payment bond for construction projects. Accordingly, substitutions for the performance and labor/material payment bonds for construction projects is not permitted.

☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

☐ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

☐

☐

☐

☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below and must include the State as an additional insured on each policy prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

☑ **Commercial General Liability Insurance** in at least an amount of: $1,000,000.00 per occurrence.

☐ **Automobile Liability Insurance** in at least an amount of: _____per occurrence.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

☐

☐

☐

☐

Notwithstanding anything contained in this section to the contrary, the Director of the Purchasing Division reserves the right to waive the requirement that the State be named as an additional insured on one or more of the Vendor's insurance policies if the Director finds that doing so is in the State's best interest.

9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. [Reserved]

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____.

☐ Liquidated Damages Contained in the Specifications.

☐ Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

> **SUBCONTRACTOR COMPLIANCE:** Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it 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/default.html.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor 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, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to 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 Vendor.

34. VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. PURCHASING AFFIDAVIT: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State, Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Purchasing Division affirming under oath that it is not in default on any monetary obligation owed to the state or a political subdivision of the state.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☐ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.

b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

c. The cost for each contract item used does not exceed one tenth of one percent (.1%)

of the total contract cost or two thousand five hundred dollars ($2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or

d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars ($50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least $1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-award interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the

WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES – This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title)
Gregory F. Zimmerman, Vice President

(Printed Name and Title)
5070 Stow Rd., Stow, OH 44224

(Address)
800-940-4025 ext. 232

(Phone Number) / (Fax Number)
GZimmerman@EnviroScienceinc.com

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

EnviroScience, Inc.

(Company)

(Authorized Signature) (Representative Name, Title)

Gregory F. Zimmerman, Vice President

(Printed Name and Title of Authorized Representative)

1/6/2022

(Date)

800-940-4025 ext. 232

(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

☑ Addendum No. 1	☐ Addendum No. 6
☐ Addendum No. 2	☐ Addendum No. 7
☐ Addendum No. 3	☐ Addendum No. 8
☐ Addendum No. 4	☐ Addendum No. 9
☐ Addendum No. 5	☐ Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal 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.

EnviroScience, Inc.

Company

Authorized Signature

1/6/2022

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection, Division of Water and Waste Management, to establish a contract for National Wetlands Inventory Mapping Updates for 23 West Virginia counties (see Attachment A – the 23 counties that need updated are the ones highlighted in purple).

2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

   2.1 "Contract Services" means the list of items identified in Section 4.1 as more fully described in these specifications.

   2.2 "Pricing Page" means the pages, contained wvOASIS or attached hereto as Exhibit A, upon which Vendor should list its proposed price for the Contract Services.

   2.3 "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

   2.4 "NWI" means National Wetlands Inventory.

   2.5 "WVDEP" means West Virginia Department of Environmental Protection.

   2.6 "FGDC" means Federal Geographic Data Committee.

   2.7 "FWS" means Fish and Wildlife Service.

   2.8 "NAIP" means National Agriculture Imagery Program.

   2.9 "CIR" means Color Infrared.

   2.10 "Q2LiDAR" means Quality Level 2, Light Detection and Ranging.

   2.11 "NRCS SSURGO" means Natural Resources Conservation Service, Soil Survey Geographic Database.

   2.12 "WV DEP" means West Virginia Department of Environmental Protection.

3. **GENERAL: NWI** Mapping in West Virginia is 40-55 years old for 47 out of 55 counties. Updated Wetland maps are urgently needed to assist agencies and the public in understanding, monitoring, and regulating our aquatic resources. NWI mapping is also the input to our wetland functional assessment tool, and therefore of critical importance in understanding wetland functions and communicating these benefits to the public and to the regulated community. WVDEP will contract out for FGDC – complaint mapping for the northern block of 23 priority counties (see attachment A – the 23 counties are the ones highlighted in purple) with the oldest mapping and highest development pressures.

   The National Wetlands Inventory (NWI) was established by the US Fish and Wildlife Service (FWS) to conduct a nationwide inventory of U.S. wetlands and surface waters to provide biologists and others with information on the distribution and type of these features to aid in conservation efforts. To do this, the NWI developed a wetland and deep-water classification system (Cowardin et al. 2013, 2nd edition) that is now the official FWS wetland classification system, as well as the Federal standard for wetland classification (adopted by the Federal Geographic Data Committee on July 29, 1996: 61 Federal Register 39465). NWI also produced the Data Collection Requirements and Procedures for Mapping Wetland, Deepwater and related habitats of the United States (August 2015) to assist contractors in providing standard compliant data. The wetlands data created for this project will be included in the Wetlands layer of the National Spatial Data Infrastructure, which is a National Geospatial Data asset and must comply with the aforementioned standards.

4. **QUALIFICATIONS:** Vendor, or Vendor's staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:

   4.1. Contractors must provide proof of FGDC-compliant work to the USFWS National Wetland Inventory (NWI) standard and having that work accepted into the NWI national geodatabase, as viewable at: https://www.fws.gov/wetlands/data/mapper.html.

   4.2. Contractor must provide proof of the required qualifications upon award. That proof could be a statement from NWI that the vendor's work has been accepted into the NWI. The NWI contracting coordinator for the eastern USA at NWI is: Herb Bergquist, Field Operations Team Lead (Eastern States), National Wetlands Inventory, Hadley, Massachusetts (413)253-8621

5. **MANDATORY REQUIREMENTS:**

   5.1. Mandatory Contract Services Requirements and Deliverables: Vendor shall provide WV DEP with the Contract items listed below**.** Contract Services must meet or exceed the mandatory requirements listed below.

5.1.1 Creation and Delivery of Data: Updated wetland mapping compliant with the USFWS NWI standard and passing quality review by the USFWS NWI will be created and delivered for the 23 counties in West Virginia shown on Attachment A comprising approximately 5.1 million acres.

5.1.1.1 Imagery used will be the most recent available federal imagery (2020 NAIP), ancillary CIR imagery, and NRCS SSURGO hydric soils layer. State datasets will include Q2 LiDAR and recent leaf-off aerial photography, which are available (at no cost) from the WVU GIS Tech Center.

5.1.1.2 Three sets of older state imagery will be consulted where recent imagery is difficult to interpret:1997 leaf-off CIR, 2003 2-ft natural color orthophotography from the WV Statewide Addressing and Mapping Board (SAMB), and 2011 Sheriff's Pictometry (mostly leaf-off).

5.1.1.3 The contractor will work with WVDEP to acquire the project areas, current GIS layers, and will work with the NWI Wetlands Database Administrator to acquire the most recent wetlands data. Please see Exhibits A and B in the Attachments.

5.1.1.4 The contractor will work with WVDEP and the NWI field operations team lead to formulate a quality assurance and quality control plan which will include a minimum of three iterations of data review throughout the life of the project, as follows

5.1.1.4.1 Prior to NWI review, WVDEP staff will receive and review each iteration provided by the contractor before passing data on to NWI staff. NWI will then conduct their 30% review of the data and provide comments to both WVDEP staff and the contractor. A final quality assurance 10% review of the entire project area will be performed by NWI Master Geodatabase.

5.1.1.4.2 The final digital data will be delivered to WVDEP and the NWI in the standard file geodatabase format and data

schema provided by the NWI after passing the wetlands data verification toolset developed by the NWI. The digital data must comply with the data quality guidelines and include a publication quality, project metadata document for posting on the Wetlands Mapper web application. A minimum of one field trip will be required by contractors to verify classification of remotely sensed wetlands. Additional field verifications can be carried out by WVDEP.

5.1.1.5 Computer based work will be completed at the contractor's location. Field verification will be coordinated locally with WVDEP, which can provide staff to conduct some or all of the field visits. Weather can be an obstacle to some locations as well as restricted access for ecological/private property reasons. Locations on public land will be prioritized during field verification.

5.1.2 Review and Final Report: All reviews must be completed, and the final report and data submitted with 21 months of receiving the award for the project. The period of performance is January 1, 2022, through September 30, 2023.

6. CONTRACT AWARD:

5.1 Contract Award: The Contract is intended to provide Agency with a purchase price for the Contract Services. The Contract shall be awarded to the Vendor that provides the Contract Services meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

5.2 Pricing Page: Vendor should complete the Pricing Page in wvOASIS by inserting the total bid amount for the entire project. Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid being disqualified.

Vendor should type or electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document.

7. **PERFORMANCE:** Vendor and Agency shall agree upon a schedule for performance of Contract Services and Contract Services Deliverables, unless such a schedule is already included herein by Agency. In the event that this Contract is designated as an open-end contract, Vendor shall perform in accordance with the release orders that may be issued against this Contract.

8. **PAYMENT:** Agency shall pay progress payments as shown below for all Contract Services performed and accepted under this Contract. Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia. Payment will be made upon delivery of two major milestones: (1) Payment of 40% of total bid will be made upon receipt of the wetland mapping for 23 counties for review by WVDEP, and (2) Payment will be made for the remaining 60% of total bid upon acceptance of the wetland mapping into the NWI database as confirmed by successful completion of the final quality assurance review by NWI.

9. **TRAVEL:**

   Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel costs may be included in the flat fee or hourly rate listed on Vendor's bid, but such costs will not be paid by the Agency separately.

10. **FACILITIES ACCESS:** Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

    10.1. Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

    10.2. Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.

    10.3. Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

    10.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

    10.5. Vendor shall inform all staff of Agency's security protocol and procedures.

11. VENDOR DEFAULT:

11.1. The following shall be considered a vendor default under this Contract.

11.1.1. Failure to perform Contract Services in accordance with the requirements contained herein.

11.1.2. Failure to comply with other specifications and requirements contained herein.

11.1.3. Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

11.1.4. Failure to remedy deficient performance upon request.

11.2. The following remedies shall be available to Agency upon default.

11.2.1. Immediate cancellation of the Contract.

11.2.2. Immediate cancellation of one or more release orders issued under this Contract.

11.2.3. Any other remedies available in law or equity.

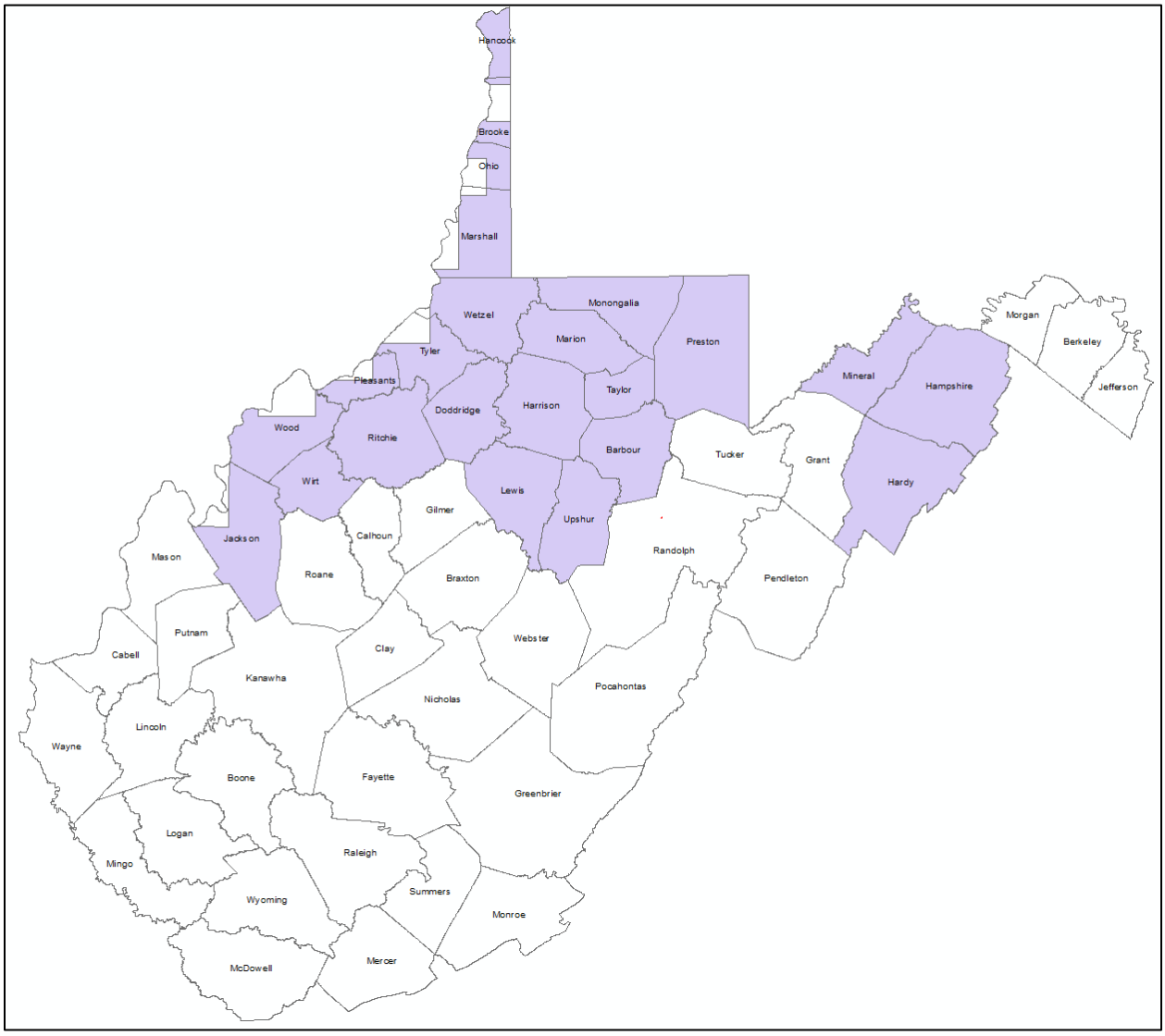
12. MISCELLANEOUS:

12.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Greg Hocevar
Telephone Number: 330-688-0111
Fax Number: 330-688-3858
Email Address: GHocevar@EnviroScienceinc.com

Exhibit A - Area of Wetland Mapping Updates for WVDEP Bid Solicitation 2021

The 2021-2023 mapping effort includes 4,752,128 acres in all or parts of 23 counties in the northern half of West Virginia, as shown in the map below.



Number of existing National Wetlands Inventory (NWI) polygons to be updated in the 23-county area:

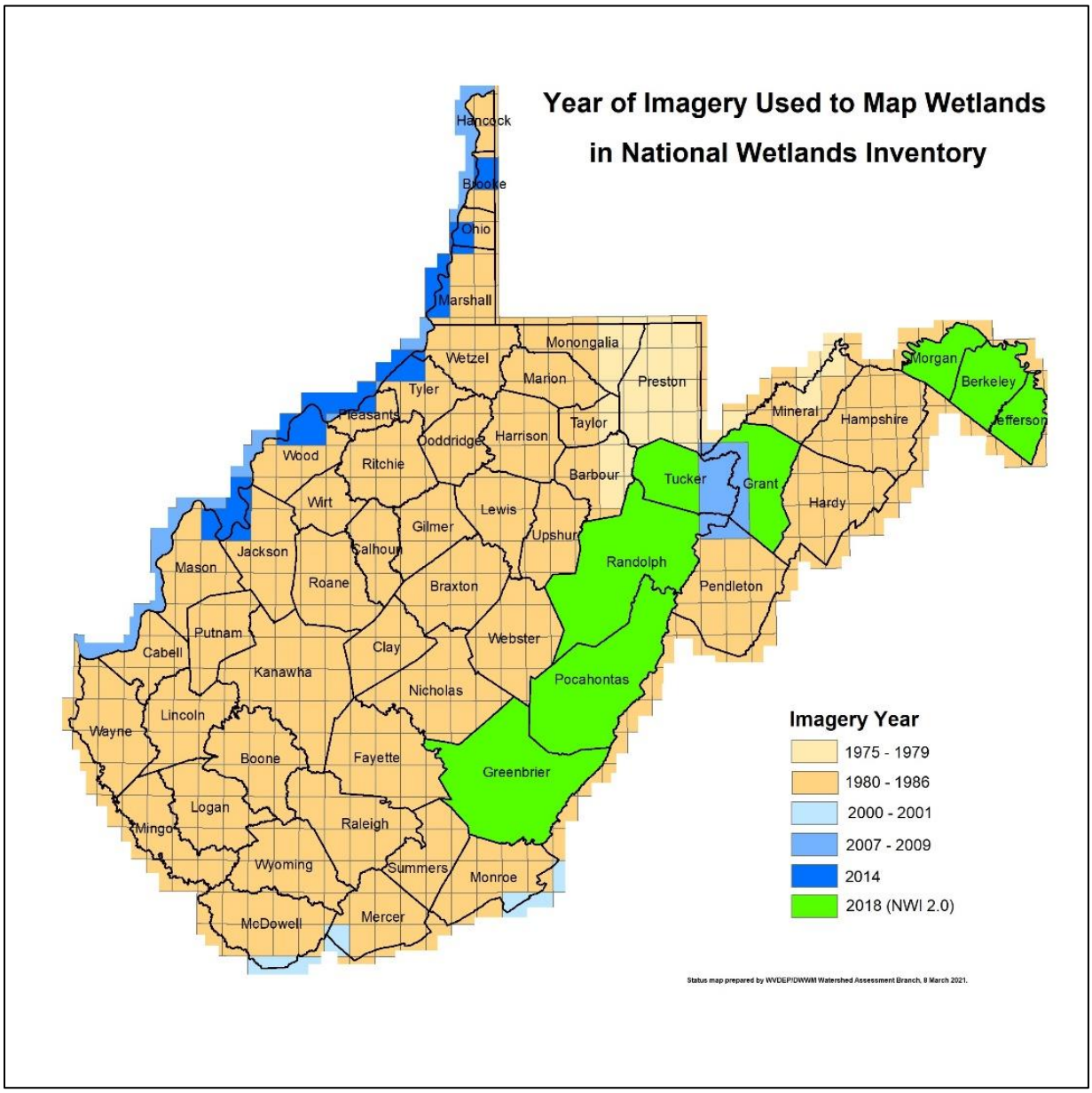
	PEM	PFOPSS	Pond	Lake	Riverine	Total
NWI Polygons	2147	1467	15471	53	445	19583
Acres	3034	4348	7088	7896	33274	55642

NWI polygons may be downloaded from: https://www.fws.gov/wetlands/Data/Data-Download.html

Technical Details

Status of Wetland Mapping in West Virginia

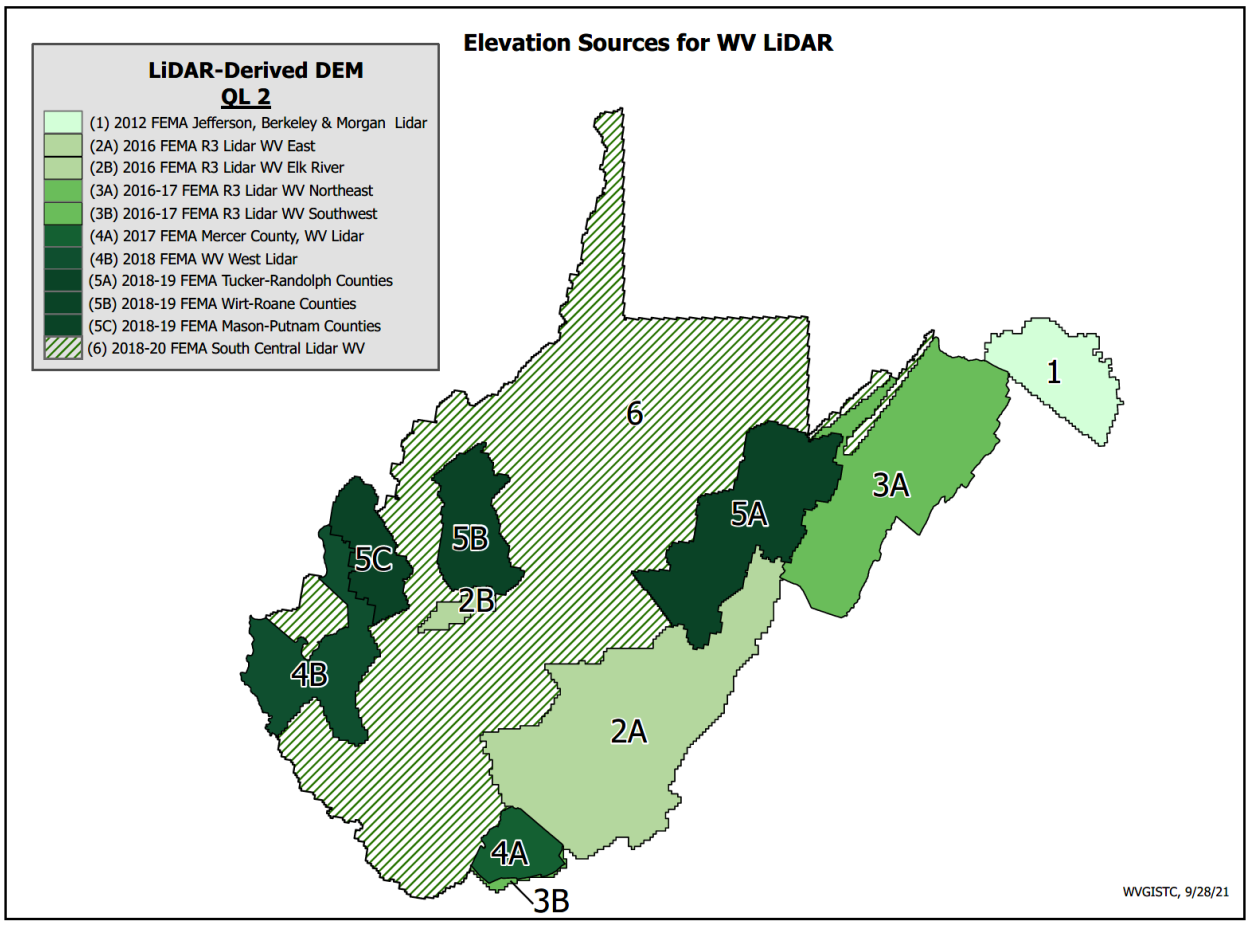
Most of West Virginia's wetland mapping dates to the 1970's and 1980's and is in urgent need of updating using modern tools and datasets.



Status of Key Imagery Sources

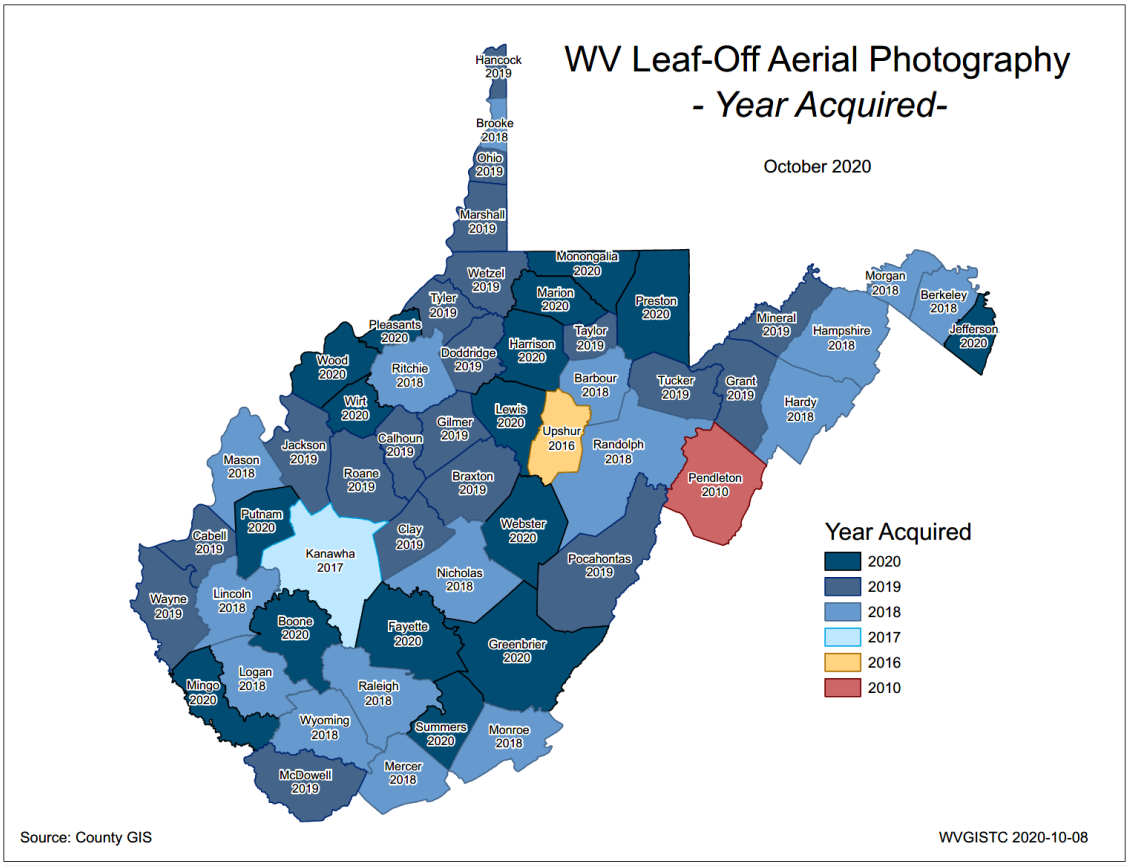
Digital Elevation Map based on Q2 Lidar

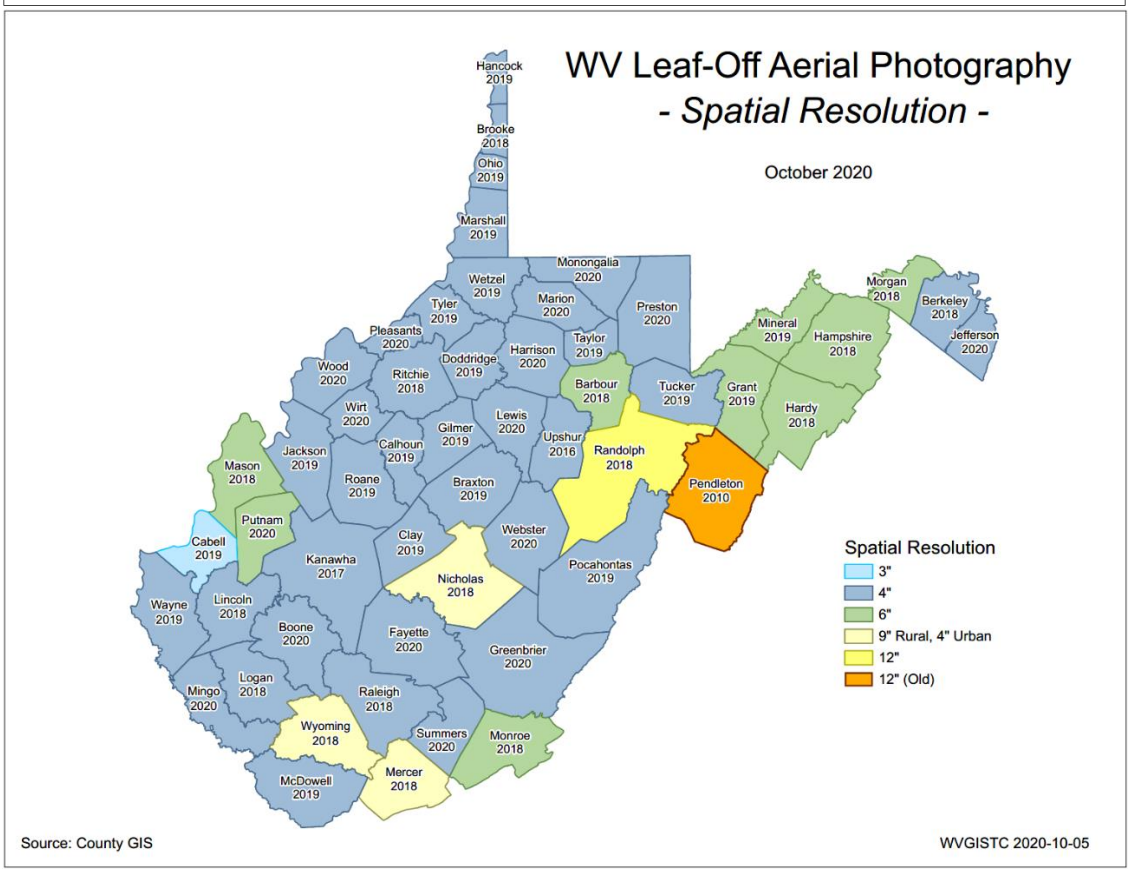
Digital elevation mapping and hillshade mapping based on Q2 Lidar is newly available statewide at: https://wvgis.wvu.edu/data/dataset.php?ID=477



High Resolution Leaf-Off Aerial Photography

Spring leaf-off imagery is available for the 23 targeted counties, with most counties dating to 2018 or more recent at 4" resolution. Only 1 county, Upshur, is older (2016) and four counties have slightly lower resolution (6"). A statewide composite of the best available leaf-off aerial imagery is available from the WV GIS Tech Center Data Clearinghouse as a map service or download, and viewable at: https://www.mapwv.gov/flood/map/ (select basemap/WV best leaves off).


WV Leaf-Off Aerial Photography
- Year Acquired-
October 2020
Hancock 2019
Brooke 2018
Ohio 2019
Marshall 2019
Wetzel 2019
Monongalia 2020
Tyler 2019
Marion 2020
Preston 2020
Pleasants 2020
Taylor 2019
Harrison 2020
Doddridge 2019
Wood 2020
Ritchie 2018
Barbour 2018
Tucker 2019
Mineral 2019
Morgan 2018
Berkeley 2018
Jefferson 2020
Hampshire 2018
Grant 2019
Hardy 2018
Wirt 2020
Lewis 2020
Gilmer 2019
Upshur 2016
Randolph 2018
Calhoun 2019
Jackson 2019
Mason 2018
Roane 2019
Braxton 2019
Pendleton 2010
Putnam 2020
Cabell 2019
Clay 2019
Webster 2020
Kanawha 2017
Pocahontas 2019
Nicholas 2018
Wayne 2019
Lincoln 2018
Boone 2020
Fayette 2020
Greenbrier 2020
Logan 2018
Mingo 2020
Raleigh 2018
Wyoming 2018
Summers 2020
Monroe 2018
Mercer 2018
McDowell 2019
Year Acquired
2020
2019
2018
2017
2016
2010
Source: County GIS
WVGISTC 2020-10-08


WV Leaf-Off Aerial Photography
- Spatial Resolution -
October 2020
Hancock 2019
Brooke 2018
Ohio 2019
Marshall 2019
Wetzel 2019
Monongalia 2020
Tyler 2019
Marion 2020
Preston 2020
Pleasants 2020
Taylor 2019
Harrison 2020
Doddridge 2019
Wood 2020
Ritchie 2018
Barbour 2018
Tucker 2019
Mineral 2019
Morgan 2018
Berkeley 2018
Jefferson 2020
Hampshire 2018
Grant 2019
Hardy 2018
Wirt 2020
Lewis 2020
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Randolph 2018
Calhoun 2019
Jackson 2019
Mason 2018
Roane 2019
Braxton 2019
Pendleton 2010
Putnam 2020
Cabell 2019
Clay 2019
Webster 2020
Kanawha 2017
Pocahontas 2019
Nicholas 2018
Wayne 2019
Lincoln 2018
Boone 2020
Fayette 2020
Greenbrier 2020
Logan 2018
Mingo 2020
Raleigh 2018
Wyoming 2018
Summers 2020
Monroe 2018
Mercer 2018
McDowell 2019
Spatial Resolution
3"
4"
6"
9" Rural, 4" Urban
12"
12" (Old)
Source: County GIS
WVGISTC 2020-10-05

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, 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: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. 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.

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.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"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 exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above. *SEE SEPERATE SCAN OF NOTARIZED COPY

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: EnviroScience, Inc.

Authorized Signature: _____ Date: 1/6/2022

State of Ohio

County of Summit, to-wit:

Taken, subscribed, and sworn to before me this 6 day of January, 2022.

My Commission expires 5/30, 2023.

AFFIX SEAL HERE

NOTARY PUBLIC Rebecca R. Pedone - SEE SCAN

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

State of West Virginia
Centralized Request for Quote
Service - Prof

Proc Folder:	968302
Doc Description:	National Wetlands Inventory Mapping Updates for 23 counties
Proc Type:	Central Purchase Order

Reason for Modification:

Addendum #1 issued to publish agency responses to all vendor submitted questions.

Date Issued	Solicitation Closes	Solicitation No	Version
2021-12-29	2022-01-06 13:30	CRFQ 0313 DEP2200000023	2

BID RECEIVING LOCATION

BID CLERK
DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
2019 WASHINGTON ST E
CHARLESTON WV 25305
US

VENDOR

Vendor Customer Code: WVOASIS Headquarters Account Code: 000000176834

Vendor Name : EnviroScience, Inc.

Address : 5070 Stow Road (Note we have a Morgantown, WV office that will complete a portion of the work)

Street :

City : Stow

State : OH **Country :** USA **Zip :** 44224

Principal Contact : Greg Zimmerman,, V.P.

Vendor Contact Phone: 800-940-4025 **Extension:** 232

FOR INFORMATION CONTACT THE BUYER

Joseph E Hager III
(304) 558-2306
joseph.e.hageriii@wv.gov

Vendor Signature X **FEIN#** 341603505 **DATE** 1/6/2022

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Environmental Protection, Division of Water and Waste Management, to establish a contract for National Wetlands Inventory Mapping Updates for 23 West Virginia counties per the attached specifications and terms and conditions.

INVOICE TO		SHIP TO	
ENVIRONMENTAL PROTECTION		ENVIRONMENTAL PROTECTION	
DIV OF WASTE AND WATER MGT		DIVISION OF WATER AND WASTE MGT	
601 57TH ST SE		601 57TH ST SE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	NWI Wetlands Data for 23 WV counties				

Comm Code	Manufacturer	Specification	Model #
81151601			

Extended Description:

NWI Wetlands Data will be created for 23 counties in WV as shown on Attachment A in the Specifications

SCHEDULE OF EVENTS

Line	Event	Event Date

SOLICITATION NUMBER: CRFQ 0313 DNR2200000023
Addendum Number: No.01

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[✔] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. To publish agency responses to all vendor submitted questions

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ DEP22*23

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[ ]	Addendum No. 2	[ ]	Addendum No. 7
[ ]	Addendum No. 3	[ ]	Addendum No. 8
[ ]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal 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.

EnviroScience, Inc.
Company

Authorized Signature

1/6/2022
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

RFI: Questions from vendors for CRFQ DEP 22*23 National Wetlands Inventory Mapping

Q.1 If I'm reading this correctly, West Virginia's Department of Environmental Protection is asking for a quote only submitted on wvOASIS, not a technical proposal. Is this correct?

A. Yes, the agency is requesting a quote to be submitted via wvOASIS.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

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"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.

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"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 exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: EnviroScience, Inc.

Authorized Signature: _____ Date: 1/6/2022

State of Ohio

County of Summit, to-wit:

Taken, subscribed, and sworn to before me this 6 day of January, 2022

My Commission expires 5/30, 2023.

AFFIX SEAL HERE

Rebecca R. Pedone
Resident Summit County
Notary Public, State of Ohio
My Commission Expires:
5/30/2023

NOTARY PUBLIC Rebecca R. Pedone

EnviroScience

Excellence In Any Environment

EnviroScienceInc.com








2021 STATEMENT OF QUALIFICATIONS

Ohio Headquarters
5070 Stow Road
Stow, Ohio 44224

Morgantown, West Virginia
129 Greenbag Road
Morgantown, WV 26501

Greater Asheville, North Carolina
Clearwater Environmental Consultants
145 7th Ave West, Suite B
Hendersonville, NC 28792

Nashville, Tennessee
1722 General George Patton Dr., B100
Brentwood, TN 37027

Richmond, Virginia
1100 Athens Ave., Suite F
Richmond, VA 23227

TOLL FREE: (800) 940-4025 | **OFFICE:** (330) 688-0111 | **FAX:** (330) 688-3858 | **24H EMERGENCY:** (888) 866-8540

TABLE OF CONTENTS

COMPANY OVERVIEW

Providing Solutions to Environmental Challenges Since 1989

EnviroScience, Inc. was established in 1989 to provide ecological and technical services in the environmental field. EnviroScience's reputation for 'Excellence in Any Environment' has been built one project at a time by

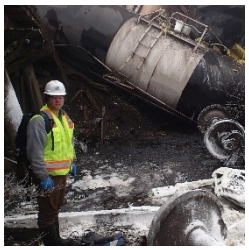
- using technically sound and proven scientific protocols,
- understanding current regulatory climates,
- drafting accurate and detailed reports,
- providing superior client service, and
- presenting cost-conscious solutions.

These strengths have made EnviroScience one of the fastest-growing companies in the region and led to its ranking as one of the top workplaces in Northeast Ohio.

EnviroScience is a team of over 100 expert biologists, geologists, commercial divers, and environmental scientists headquartered in Ohio, with additional offices in Nashville, Tennessee; Morgantown, West Virginia; and Richmond, Virginia. We have served clients such as federal, state, and municipal governments, departments of transportation, as well as mining, industrial, engineering, and private sector firms since our inception in Ohio in 1989. Our ecological consulting services are nationally recognized and include restoration and environmental compliance assistance on projects of all sizes for freshwater mussels, bats, fisheries, aquatic surveys, and streams and wetlands. We additionally have a large bioassay and taxonomy identification laboratory to support various ecological and biomonitoring projects, including whole effluent toxicity and harmful algal bloom testing. EnviroScience was awarded key task orders for the National Aquatic Resource Surveys through the USEPA to conduct coastal sampling and training across the United States.

Few firms in the country retain as many biologists, licensed engineers, divers, and scientists under one roof and most of our staff have over 10 years of experience in their fields. Because of our team's diverse professional background, we can provide comprehensive in-house services and an integrated approach to solving environmental challenges, saving clients time, reducing costs, and ensuring high-quality work products. We always put our clients' needs first by only using the necessary resources and completing projects on time and within or below budget. Because of this business model, we hold Master Service Agreements with national transportation and utility companies.

> *"EnviroScience is one of CSXT's preferred providers for Environmental Consulting and our only expert in the field of Ecological Surveys dealing specifically with aquatic environments. They have been used on the most complex problems that we have faced in the last several years and have an impeccable reputation within and outside of CSXT."*
>
> **—Environmental Remediation Manager, CSX Transportation**



EnviroScience maintains an inventory and access to advanced technology and equipment to meet the demands of ever-changing regulations and satisfy the needs of any size project. Our inventory includes a fleet of sampling and diving vessels, electrofishing gear for any application, water quality meters, work trailers, depth temperature and flow survey equipment, as well as extensive hardhat and surface-supplied air diving equipment, and underwater construction equipment. EnviroScience maintains a fleet of over 10 boats, 20 vehicles, and an Argo Amphibious ATV. We have also invested significant resources in sub-meter accurate GPS units and GIS software, enabling us to import field data into AutoCAD® and ArcGIS® for advanced analysis or production of full-sized color maps. This resource transforms complex data into an easily understood format that engineers can import into AutoCAD® or MicroStation® and use directly in their site design process.

ENVIROSCIENCE, INC. CORPORATE PROFILE

A detailed list of services and capabilities is available on our website: www.EnviroScienceInc.com

SERVICE:	Ecological, Biomonitoring, and Marine Services
ORGANIZATION:	Small Business, Incorporated in the State of Ohio
PERSONNEL:	4 Principals, 115 Employees 89 Scientists 4 Engineers 9 Laboratory Technicians 6 ADCI Commercial Divers / 3 Dive Supervisors
LOCATIONS:	HQ: Stow, OH (98 employees) Nashville, TN (6 employees) Richmond, VA (6 employees) Morgantown, WV (5 employees)
KEY CAPABILITIES:	Endangered Mussel, Fish, Bat and Reptile Surveys Wetland Delineation, Permitting, and Mitigation Fish Impingement and Entrainment Studies Commercial Diving and Marine Services Natural Resource Planning and Monitoring Emergency Response and Ecological Impact Assessments Natural Resource Damage Assessments Ecological Risk Assessments Environmental Design/Compliance Services NPDES Permit Assistance Stormwater Management NEPA Evaluations GIS/GPS Services Stream and Wetland Restoration Design/Build Water and Sediment Toxicity Testing Invasive Species Control Environmental Sampling Representation with Regulatory Agencies

A true test of performance is client satisfaction. Our dedication and technical excellence has resulted in many repeat clients and established EnviroScience as the "go-to" firm in our service areas. Some representative clients are:

American Electric Power	Indiana DNR	USEPA
TimkenSteel	PennDOT	New York State DEC
CSX Transportation	GenOn Energy	Parsons Brinckerhoff
Dominion East Ohio Gas	Florida Fish & Wildlife	FirstEnergy
U.S. Army Corps of Engineers	Canadian National Railway	Battelle Memorial Institute

OUR REPUTATION FOR "EXCELLENCE IN ANY ENVIRONMENT" HAS BEEN BUILT ONE PROJECT AT A TIME USING TECHNICALLY SOUND AND PROVEN SCIENTIFIC PROTOCOLS, UNDERSTANDING REGULATORY CLIMATES, ACCURATE AND DETAILED REPORTS, COMMITMENT TO SUPERIOR CLIENT SERVICE, AND COST-CONSCIOUS SOLUTIONS.

EnviroScience, Inc. provides turn-key services in the following areas:

TOXICITY TESTING

- Whole Effluent Toxicity (WET) Testing
- Toxicity Identification/Reduction Evaluations (TIE/TRE)
- Whole Sediment & Elutriate Toxicity Testing
- Water Effect Ratio Studies
- Common Toxicity Testing
- Product Testing
- Harmful Algal Bloom Toxin Testing (Cyanotoxins): *Microcystin-LR, Anatoxin-a, Saxitoxins, and Cylindrospermopsin*

COMMERCIAL DIVING & MARINE

- ADCI Member Company
- Underwater Construction
- Underwater Engineering
- Potable Water
- Contaminated Water
- UW Testing/Video Inspections
- Burning/Welding/Jetting
- Scientific Diving
- Bathymetry Sidescan Sonar
- Barge & Cell Inspections
- Debris Removal
- Intake Cleaning/Inspection
- Nondestructive Testing (NDT)
- Towboat Servicing
- Salvage
- Dredging
- Mooring Cell & Mooring Dolphins Inspection & Repair
- Sluice Gate Repair & Installation
- 6 dive vessels stages across OH, VA, & TN

EnviroScience, Inc. services continued:

ECOLOGICAL STUDIES

- Threatened & Endangered Species Surveys
- Freshwater Mussel Surveys
- Fishery Assessments
- Bat, Macroinvertebrate, Mammal, Amphibian, & Plant Surveys
- Phytoplankton, Zooplankton, & Ichthyoplankton Taxonomy
- Watershed & Sediment Studies
- GIS/GPS Remote Sensing
- Biological Assessments
- Expert Testimony
- Ecological Risk
- Natural Resource Damage Assessments
- Data Analytics & Modeling

NEPA DOCUMENTATION

- Environmental Assessments
- Environmental Impact Statements
- Categorical Exclusions

LAKE MANAGEMENT

- Harmful Algal Bloom (HAB) Detection & Consultation
- Shoreline Restoration
- Lake Management
- Lake Diagnostics Studies
- Depth & Sediment Surveys
- Invasive Species Control

ECOLOGICAL SURVEY & DETERMINATION

- Fish, Mussel, Reptile, Benthic Macroinvertebrates, Mammal, Vegetation
- Wetland Assessment & Restoration
- USACE & USEPA Permitting
- Biocriteria (IBI, ICI, QHEI, VIBI)

RESTORATION

- Design-build (RiverWorks)
- Design & Construction
- Streams/Wetlands
- Natural Stream Design
- Wetlands/Prairie/Ecosystems
- Mitigation & Permitting
- Bank/Slope Stabilization
- Dam Removal/Restoration
- Riparian Enhancement/Stabilization
- Morphological Assessment
- Erosion Monitoring & Assessment
- Hydrologic Monitoring & Assessment
- Hydrologic & Hydraulic Modeling
- Shoreline Enhancement/Stabilization
- Conservation Real Estate
- Grant Writing
- Invasive Species Control

WETLANDS & STREAMS

- Watershed Delineation
- Waterway Permitting (401 & 404)
- Mitigation Design & Monitoring
- Watershed Studies
- Sedimentation Studies
- Hydrologic Budgets
- Functional Assessments (ORAM, QHEI, TNHD)
- Invasive Species Control

ENVIRONMENTAL SAMPLING

- Water Quality Monitoring
- Soil, Sediment, & Water by USEPA Methods
- Field Analytical Assessment & Sampling
- Regulatory Compliance & Audit Assistance

EnviroScience, Inc. services continued:

EMERGENCY RESPONSE

- Emergency Planning & Preparedness
- Emergency Response Plans
- Environmental Unit Leader Staffing & Other Critical ICS Positions
- Waste Stream Assessment & Determinations
- Biological Survey & Assessment
- Environmental Assessment & Delineation
- Natural Resource Damage Assessment (NRDA)
- Class 1 & Short Line Railroad Derailment Response
- Petroleum Release Response
- Natural Disaster Response
- Chemical Plant Fire Response

ENVIRONMENTAL SAMPLING

- Environmental Sampling & Analysis Plans
- Surface & Groundwater, Sediment, Soil & Waste Characterization Sampling
- Regulatory Reporting
- Geochemical Interpretation

STORMWATER MANAGEMENT SERVICES

- MS4 Permit Assistance
- Environmental Inspection & Maintenance
- Industrial MSGP
- Green Infrastructure

COMPLIANCE SERVICES

- NPDES Permitting & Regulatory Support
- Phase 1 & 2 Environmental Site Assessments
- Process Water Treatment Devices
- Commercial Wastewater Treatment Systems
- Stormwater Construction, MS4, Inspection, & BMPs
- Permit-to-Install (PTIs)
- Plans (SWPPPs, SPCC, Hazardous Waste Contingency, Sludge Management)
- Environmental Training (Stormwater, SPCC, Hazardous Waste, Universal Waste)
- Environmental Compliance Auditing
- Constructed Wetlands
- Oily Waste Treatment Systems
- Beneficial Reuse & Recycling
- Plant Closures—Cessation of Regulated Operations
- Asbestos & Lead Based Paint Assessment
- Surface Mining Control & Reclamation Act (SMCRA)
- Reporting (SARA, TSCA)
- Litigation Support

WE'RE NOT JUST LAB TECHS. WE'RE TOXICITY EXPERTS WITH 25 YEARS OF EXPERIENCE TO PROVE IT.

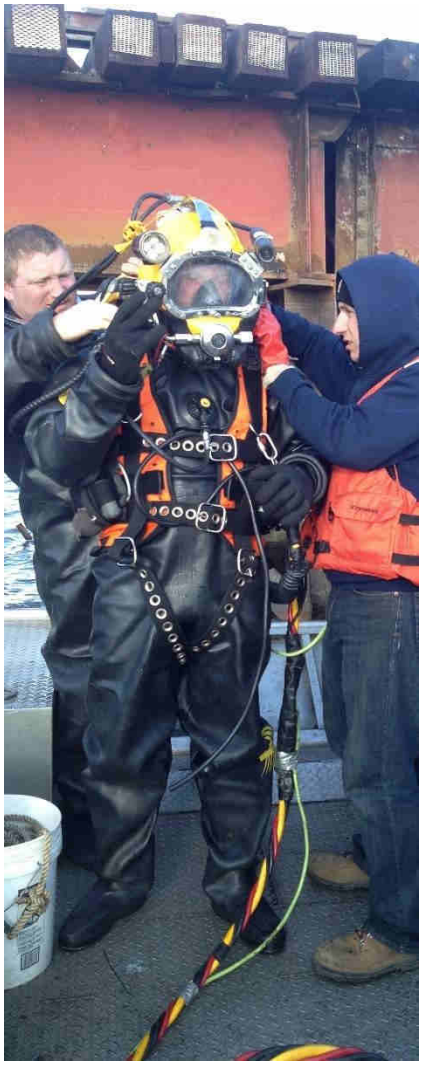
TOXICITY TESTING

The Toxicity Testing Laboratory at EnviroScience provides comprehensive testing and environmental consulting, specializing in National Pollution Discharge Elimination System (NPDES) evaluations and compliance. Our experience in Biomonitoring extends from toxicity testing to full scale permit investigations including Toxicity Identification Evaluations (TIE), Toxicity Reduction Evaluations (TRE) and NPDES permit requirements. Aquatic toxicity tests, also known as bioassays or Whole Effluent Toxicity (WET) Testing, are used to monitor the toxicity of discharge waters. Toxicity tests are a cost-effective evaluation of potential environmental impacts and provide a measure of the interaction between constituents in a wastewater discharge. Aquatic test organisms are subjected to varying concentrations of wastewater under controlled laboratory conditions. Toxicity levels are determined by statistical analysis.

All methods used to perform these services are in accordance with EPA and/or USEPA methods. EnviroScience has provided high quality environmental services to hundreds of satisfied municipal, industrial, and private sector clients throughout the Midwest and Northeast. Our company has an excellent reputation with regulatory agencies on both the state and federal level. Our confidence in our methodology and the professionalism of our experienced biologists allows us to guarantee that our procedures and reported data will meet all acceptance criteria. *Operational seven days a week*, the EnviroScience Toxicity Testing Laboratory provides flexible scheduling, comprehensive sampling, expert consultation, and timely reporting. Quality assurance within the laboratory is achieved through strict adherence to guidelines established by state and federal regulatory agencies, in-house culturing, and a dedicated staff.

PROJECT HIGHLIGHT

SINCE 2011, ENVIROSCIENCE, HAS PROVIDED WET TESTING SERVICE TO CONSOL ENERGY INC., TO FULFILL THEIR NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS. ENVIROSCIENCE HAS AN EXCELLENT REPUTATION WITH REGULATORY AGENCIES ON BOTH THE STATE AND FEDERAL LEVEL, ALLOWING CONSOL TO SUCCESSFULLY FULFILL THEIR NPDES PERMIT REQUIREMENTS.



COMMERCIAL DIVING & MARINE SERVICES

EnviroScience, Inc. has conducted a wide range of diving operations since 1998. Over the years, these operations evolved into a specialized division of the company called ES-Divers. ES-Divers offers complete surface supplied diving operations, including underwater inspection, subaqueous construction services, potable water diving, contaminated diving, as well as support for our biological studies. ES-Divers has a constant commitment to providing comprehensive solutions for all of our clients' in water needs.

ES-Divers maintains an experienced staff and state-of-the-art equipment in order to provide the best service to our clients. ES-Divers is an active member of the Association of Diving Contractors International (ADCI). Our team is made up of a diverse staff, including 6 full-time ADCI divers, 3 ADCI diving supervisors, and seasonal staff of over 12 ADCI divers.

In addition, all of our personnel, equipment, and diving operation plans are ADCI/OSHA CFR 29 compliant. ES-Divers has completed numerous projects for the US Army Corps of Engineers and is EM 385 1-1 compliant for federal projects. ES-Divers also maintains dedicated potable water diving gear and has completed many AWWA compliant projects, as well as diving in contaminated and confined space environments.

ES-Divers provides a wide range of services for a variety of clients across the country specializing in inland and near-shore diving. Our experienced staff members can be mobilized on short notice to help manage our clients' emergency project needs. Additionally, our attention to detail, timely task completion, and sterling safety record aid us in saving our clients time and cost on all projects. Whether the project is large or small, in clear water or zero visibility, or in extreme temperatures, ES-Divers is equipped to handle your project safely and efficiently.

PROJECT HIGHLIGHT – CITY OF TOLEDO

ES-Divers holds a long-term contract with the City of Toledo to inspect, perform repairs, and provide detailed reports on offshore intake cribs and inland surge wells.

PROJECT HIGHLIGHT – WASHINGTON COUNTY, PA

ES-Divers performed a retro-fitment on the main sluice gate and overflow valve at Cross Creek Dam in Washington County. The team also fabricated and installed a cofferdam in 80 plus feet of water, removed the retired cast gate, installed/sealed fitment of the updated stainless steel gate, and installed all stems, guides, and operators.

COMMERCIAL DIVING/MARINE SERVICES:

INDUSTRIAL FACILITIES

Power Plants

- Trash Rack Cleaning & Repair
- Traveling Screen Rebuilds (In & Out of Water)
- Pumping & Jetting
- Pump Inspections
- Log Boom Rebuild & Maintenance
- Intake Cleaning & Inspections
- Sluice Gate Inspection and Repair

Steel Plants

- Contaminated Diving
- Extreme Temperature Diving
- Pumping, Jetting, & Debris Removal
- General Inspections
- Traveling Screen Inspections & Repairs

Collector Wells

- Installation Inspections
- Valve Maintenance/Flow Testing
- Repair
- New Construction

CONSTRUCTION SERVICES

Marine Construction

- Sheet Pile Inspections
- Sheet Pile Removal
- Sluice Gate Inspection & Repair
- NDT
- Bridge Inspections
- Jetting & Pumping
- Underwater Concrete
- Debris Removal
- Welding & Burning

MUNICIPALITIES

Water Treatment Plants

- Contaminated Diving
- Potable Water Diving (AWWA)
- Intake & Outfall Inspection
- Clarifier Inspection & Repair

MUNICIPALITIES (Continued)

Dams

- General Inspections
- General Repair
- Gate Evaluations
- Bulkhead Fabrication

Industrial Waste Water Treatment

- Mixing Zone Studies
- Discharge Inspection & Repair

TRANSPORTATION INDUSTRY

CSX, Norfolk Southern, Canadian National

- Derailment Assistance
- Equipment Salvage & Asset Loss Prevention
- Released/Lost Product Reclamation
- Boom Deployment
- Sheet Pile Repair (Welding)
- General Inspection
- Underwater Concrete Installation, Inspection & Repair

MARINE DIVING/SERVICES

Freshwater Mussel Surveys/Translocations

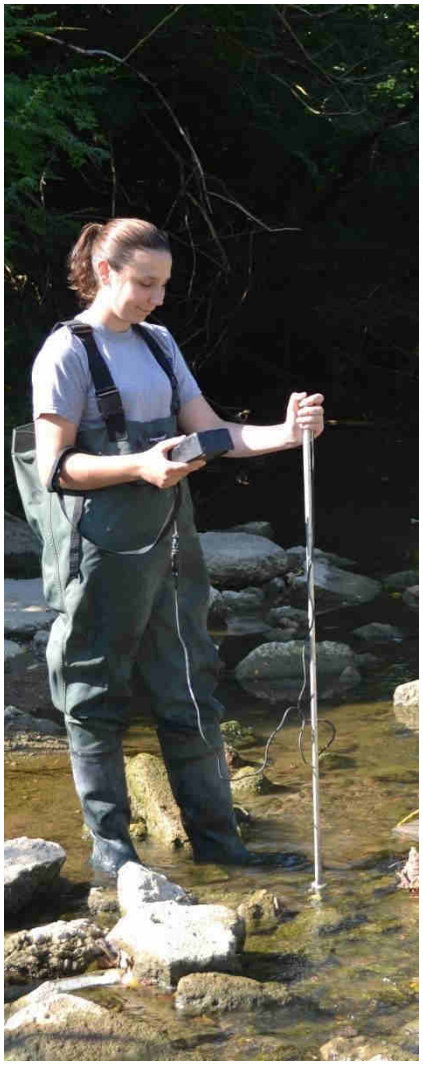
- Bridge Projects
- USACE Compliance Surveys/Dredge Projects
- Barge Loading Facilities
- Outfalls
- Pipeline Crossings

Habitat and Depth Surveys

- Mussel and Fish Habitat Studies
- Depth Survey Output to CAD or GIS
- Sidescan Sonar
- Thermal and Flow Monitoring

ROV

- Inspections/Penetrations



NATIONALLY RECOGNIZED EXPERTS IN NATURAL RESOURCES. WHETHER IN THE FIELD OR ON PAPER, WE'VE GOT YOU COVERED.

ECOLOGICAL SERVICES

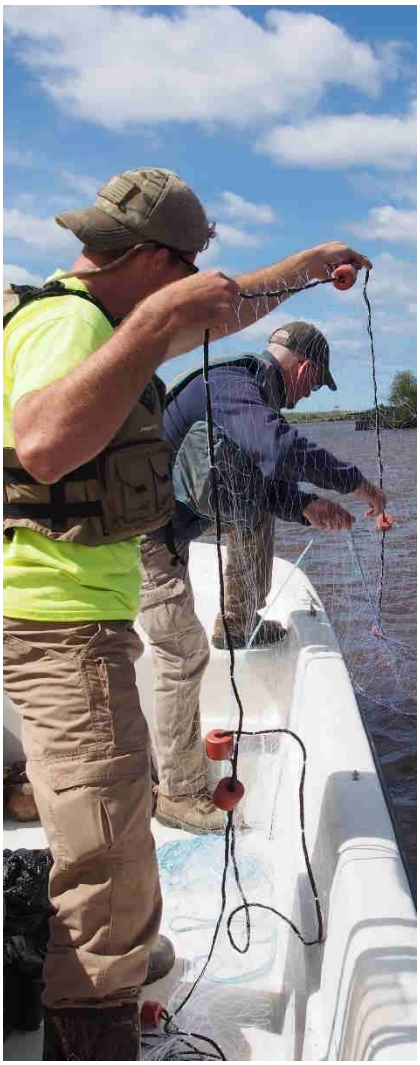
EnviroScience's Ecological Services group is a large team of experienced biologists and scientists that conduct a variety of biological surveys and services for public, industrial, and private clients. Services include natural resource inventories, environmental assessments, environmental permitting, emergency response activities, and expert testimony for litigation cases. Biologists within the group have experience with many types of projects which further their understanding of the interrelationship between the environment, regulations, and assessing potential impacts. Our biologists can perform assessments of fish, benthic macroinvertebrates, freshwater mussels, birds, reptiles, amphibians, mammals, and vegetation. In addition, EnviroScience professionals provide wetland delineations and mitigations, and stream restoration services.

EnviroScience biologists have federal and state scientific collecting permits for many states throughout the U.S. In addition, EnviroScience is pre-qualified to conduct a wide range of environmental services and inspections for many state Departments of Transportation, including but not limited to the Ohio Department of Transportation, the Pennsylvania Department of Transportation, and the West Virginia Department of Highways.

We are also certified mussel surveyors by the United States Fish and Wildlife Service and accepted by the Pennsylvania Fish and Boat Commission for Threatened and Endangered Fish Inventories.

PROJECT HIGHLIGHT – USEPA NCCA

IN 2015, ENVIROSCIENCE AIDED THE USEPA IN EVALUATING THE NATION'S COASTAL CONDITIONS IN CONTRACTS VALUED AT OVER $2.5 MILLION. ENVIROSCIENCE PROVIDED SUPPORT WITH TRAINING, SAMPLING, SUPPLIES, AND LABORATORY REBATCHING FOR THE 2015 NATIONAL COASTAL CONDITION ASSESSMENT (NCCA).

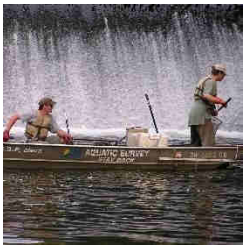


OUR TEAM OF BIOLOGISTS AND DIVERS HAVE OVER 75 YEARS OF COMBINED EXPERIENCE AND HAVE SAMPLED OVER 4,000 LOCATIONS ACROSS THE UNITED STATES.

AQUATIC SURVEY SERVICES

EnviroScience maintains one of the largest aquatic survey groups in the country. Our respected team of biologists and divers have over 75 years of combined experience. Our team has completed surveys of rivers and lakes of all sizes and has sampled over 4,000 locations across the United States. Our in-house staff custom designs each project to meet your data requirements, which are gathered using the latest scientific equipment and procedures. Our experience, combined with our professional relationship with state and federal authorities, ensure that projects are completed accurately, on time, and within budget.

Aquatic Survey is a set of scientific techniques used for assessing the health of lakes, streams and rivers. These techniques typically focus on assessing fish and benthic macroinvertebrate communities and include a detailed analysis of habitat characteristics. Aquatic surveys are commonly required for NPDES permits in order to quantify the effects of discharges on receiving waters and to evaluate and verify stream use designations. These surveys are frequently used to support projects such as wastewater treatment plant expansions. EnviroScience's clients have also used these surveys to evaluate a number of special issues such as combined sewer overflows, construction impacts, natural resource assessments, environmental impact assessments, watershed diagnostic studies, and baseline surveys to support spill prevention, control plans, and urban planning.



PROJECT HIGHLIGHT – 316(B) STUDIES

ENVIROSCIENCE HAS PERFORMED 316(B) IMPINGEMENT AND ENTRAINMENT STUDIES FOR ENERGY CLIENTS THROUGHOUT PENNSYLVANIA, VIRGINIA, AND OHIO. SINCE 2015, ENVIROSCIENCE HAS BEEN HELPING DOMINION RESOURCES RENEW ITS SECTION 316(B) NPDES PERMIT FOR SEVERAL OF ITS POWER STATIONS.

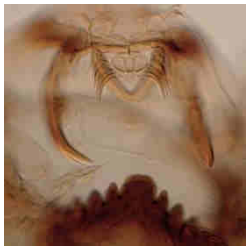
AQUATIC SURVEY SERVICES:

FISH SURVEY: EnviroScience surveys by electroshocking, seining, hoopnetting, and trawling. In addition to open water sampling techniques, EnviroScience has significant experience completing 316(b) surveys at power plants throughout the Midwest and East coast. EnviroScience is fully equipped with boat-mounted electrofishing equipment for deep-water applications, longline and tote-barge equipment for wading methods, and backpack equipment for sampling headwater streams. EnviroScience also maintains an inventory of trawling, hoopnetting, and seining equipment for customized fish survey applications.

MACROBENTHOS SURVEY: EnviroScience surveys aquatic invertebrate communities using qualitative methods such as Surber and kick sampling and/or more quantitative techniques such as Hester-Dendy artificial substrate samplers. Deep-water benthic invertebrates can be sampled using an Ekman dredge or our boat mounted Ponar dredge.

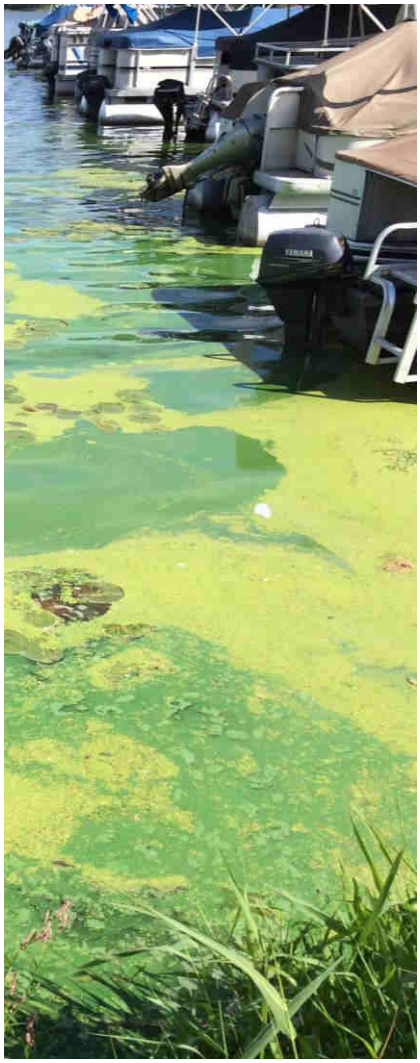
STREAM HABITAT ASSESSMENT: An assessment of stream habitat includes site-specific information such as flow characteristics and riparian habitat characteristics.

WATER CHEMISTRY: Chemical parameters are chosen and tested to fulfill individual project needs. EnviroScience has the sampling and analytical capabilities needed to support bioassays, 316(a) thermal discharge studies, low-level mercury sampling, mixing zone studies, sediment sampling, and other biological studies. EnviroScience sampling equipment includes several YSI, Inc. monitoring probes and data sondes that allow simultaneous long-term comparisons of study sites.



PROJECT HIGHLIGHT

Mouthpart deformities in midges (Diptera: Chironomidae) result during larval development and are sublethal responses to heavy metals, organochloropesticides and other organic xenobiotics. EnviroScience conducted a benthic macroinvertebrate survey for CSX Transportation, Inc. to establish baseline data to represent pre-construction background conditions on a section of the Anacostia River in Washington DC.



ALGAE AND BIOFILM ANALYSES

Since algal communities respond quickly to changes in water quality, they are often used as indicators of environmental stressors. In high nutrient systems, algal blooms and cyanotoxins can impact recreational use and contaminate drinking water sources. Phytoplankton and periphyton identification, enumeration, and biovolume measurements can be an important first step in characterizing and responding to nuisance and noxious blooms of algae and cyanobacteria (also known as blue-green algae). EnviroScience provides expert taxonomic analysis using USEPA approved methods and state-of-the-art microscopy equipment. We provide unique solutions for monitoring natural communities, harmful algae blooms, and nuisance biofilms. We can also provide supporting materials and protocols for clients collecting their own samples.

To address the emerging issue of toxic cyanobacterial blooms, EnviroScience provides a suite of toxin analyses with rapid turnaround times. We analyze microcystins and other cyanobacterial toxins using USEPA-approved Enzyme Linked Immunosorbent Assay (ELISA) and qPCR methods. Over the past several years, EnviroScience taxonomists have processed over 5,000 algae and diatom samples for clients nationwide including USEPA's National Aquatic Resource Survey and associated federal programs.

ALGAL/BIOFILM SERVICES:

- Taxonomic Identification and Enumeration
- Algal Viability through ATP and Chlorophyll-α Analysis
- Cyanotoxin Testing using ELISA and qPCR Techniques
- Permanent Diatom Slide Preparation
- Quantitative Periphyton and Phytoplankton Sample Collection
- Field Study Design and Consultation

ALGAE TOXIN TESTING VIA ELISA METHOD:

- Microcystin-LR
- Anatoxin-a
- Saxitoxins
- Cylindrospermopsin

PROJECT HIGHLIGHT – AIRPORT BIOFILMS

ENVIROSCIENCE HAS WORKED WITH A MAJOR AIRPORT TO ADDRESS ISSUES REGARDING BIOFILM FORMATION IN WATERS RECEIVING RUNOFF LADEN WITH PAVEMENT AND AIRCRAFT DE-ICERS. ENVIROSCIENCE USED A MULTI-PHASE SAMPLING DESIGN TO MEASURE INSTREAM BIOLOGICAL AND CHEMICAL PARAMETERS IN AN EFFORT TO IDENTIFY THE CAUSES AND TRIGGERS OF NUISANCE BIOFILM GROWTH. ENVIROSCIENCE HAS ALSO PROVIDED CONSULTING SERVICES TO ASSIST THE AIRPORT IN MEETING NPDES PERMIT AND OTHER REGULATIONS.

ENVIROSCIENCE IS ONE OF THE FEW COMPANIES IN THE COUNTRY WITH A TEAM OF ADCI DIVERS AND EQUIPMENT CERTIFICATIONS THAT CAN DIVE TO THE STRINGENT EM-385-1-1 SPECIFICATIONS REQUIRED FOR USACE AND FEDERAL PROJECTS.

FRESHWATER MUSSEL SURVEYS

Today, many bridge and road rehabilitations and improvements require freshwater mussel services through the Federal Endangered Species Act. EnviroScience has completed mussel surveys throughout the United States, including AL, AR, FL, GA, IL, IA, IN, KY, KS, MI, MO, NY, OH, PA, and WV. Although the level of effort and reporting requirements vary with the complexity of the project, many transportation-related freshwater mussel surveys include a few major components.

FRESHWATER MUSSEL SURVEY SERVICES:

- Site walkovers to determine if mussel habitat may be present
- Mussel habitat delineations
- Qualitative surveys to determine presence of threatened or endangered mussel species (Phase I)
- Quantitative surveys to determine populations for ESA consultations (Phase II)
- Mussel translocations and subsequent monitoring programs
- Biological Assessments and Programmatic Agreement Development for ESA Section 7

EnviroScience has extensive experience performing mussel surveys for federal, state, and local transportation projects, as well as surveys associated with NPDES permit modification, Federal Transit Administration, and U.S. Army Corps of Engineers (USACE) dredging projects. All EnviroScience mussel survey biologists are SCUBA certified and have surveyed streams ranging from small creeks to the Ohio River. EnviroScience's experience with regional regulations and regulators ensures compliance with all project specifications. EnviroScience is one of the few companies in the country with a team of ADCI divers and equipment certifications that can dive to the stringent EM-385-1-1 specifications required for USACE and Federal projects.

PROJECT HIGHLIGHT

ENVIROSCIENCE WAS CONTRACTED THROUGH MICHAEL BAKER AND PENNDOT TO SALVAGE, RELOCATE, AND MONITOR OVER 130,000 FEDERALLY AND STATE ENDANGERED MUSSELS IN THE ALLEGHENY RIVER FOR THE REPLACEMENT OF HUNTERS STATION BRIDGE. THE PROJECT IS THE LARGEST OF ITS KIND TO DATE.

"THE ENVIRONMENTAL ASPECT OF THIS PROJECT BECAME A HUGE UNDERTAKING AND EXTREMELY CRITICAL TO THE SCHEDULE. ENVIROSCIENCE, INC., FOLLOWED THE ENVIRONMENTAL PROCESS SO THAT EVERY LAST MINUTE DETAIL WAS ADDRESSED IN ORDER TO OBTAIN THE OHIO ISOLATED WETLANDS PERMIT FROM THE OHIO [EPA] IN A TIMELY MANNER. THIS WAS CRITICAL TO THE ENTIRE PROJECT AND SCHEDULE, SO THAT THE TREES COULD BE CLEARED ON THE SITE WITHIN THE HIBERNATION WINDOW OF THE [ENDANGERED] INDIANA BAT…"

—Army Corps of Engineers

WETLAND & WATERWAY SERVICES

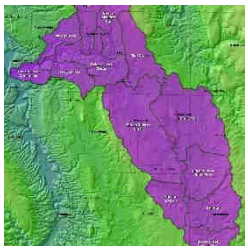
EnviroScience provides a wide range of wetland and stream services to clients in a variety of industries such as engineering and design firms, development companies, legal firms, and public agencies. EnviroScience's extensive team (>8 fulltime personnel) of wetland and stream delineators enable the company to tackle even the largest projects and most challenging deadlines.

WETLAND/WATERWAY SERVICES:

DELINEATION SERVICES: EnviroScience has performed wetland delineations on properties ranging in size from 1 to 6,000 plus acres, and from nearly pristine to severely-disturbed landscapes. EnviroScience scientists are trained in the current methods of wetlands delineation (according to the 1987 USACE Delineation Manual and current Regional Supplements) and survey techniques using a state-of-the-art Trimble® differential GPS. GPS data collection allows EnviroScience to prepare wetland maps without the need and additional cost of traditional survey teams. The survey map and flagged wetland boundaries provide a strong planning tool for any project involving changes in land use. Delineation reports are completed to suit the client's project-specific needs while complying with state and federal reporting requirements. Wetlands maps are prepared using AutoCAD® or ArcGIS® software and are available in digital format to ensure compatibility with construction drawings.

WETLAND PERMIT & WATER QUALITY CERTIFICATION APPLICATIONS: Projects requiring unavoidable impacts to wetlands require USACE and/or state approval. EnviroScience prepares and submits application packages for clients applying for Section 404 permits, Section 401 Water Quality Certifications, and Isolated Wetland Permits. EnviroScience biologists have a strong reputation with regulatory agencies based on decades of quality work, and this reputation helps obtain approvals in a timely manner.

WETLAND MITIGATION & RESTORATION: Mitigation for wetland impacts and stream habitat losses is frequently a necessary part of project planning given today's rules governing impacts to wetlands and other aquatic resources. EnviroScience wetland scientists consult with clients to identify strategies to avoid and/or minimize construction impacts to wetlands and streams. When impacts are unavoidable, project-specific mitigation plans are developed which may include mitigation banking, in-lieu fee arrangements, and wetland creation. When wetland creation is the preferred mitigation choice, EnviroScience can complete turnkey wetland creation services including analyzing wetland functions and values, site selection, water budget, design, construction, and plantings. EnviroScience biologists stay involved after wetland creation to ensure successful completion through regular ecological monitoring, follow-up plantings, invasive species control, and submitting required reports to USACE. EnviroScience's design-build approach allows our biologists to be involved in projects from start to finish ensuring that the completed project meets the client's needs.



PROJECT HIGHLIGHT – TINKERS CREEK WATERSHED

EnviroScience completed a Comprehensive Wetland Assessment and Prioritization Plan for the Tinkers Creek Watershed to inventory and assess the ecological, hydrologic and economic value of wetlands within the entire Tinkers Creek Watershed (96.4 sq. mi.), from headwaters to the confluence of Tinkers Creek and the Cuyahoga River at Cuyahoga River Mile 16.36. A total of 951 wetlands were identified in the Tinkers Creek Watershed with a total area of 3,917 ac. Average calculated economic values for wetlands in the Tinkers Creek Watershed were $130,572 per wetland acre outside of parks, and $361,995 per wetland acre in park.

PROJECT HIGHLIGHT – PLUM BROOK STATION

EnviroScience delineated wetlands and other waters on two NASA properties: the 6,431-acre Plum Brook Station in Sandusky, Ohio and the 300-acre Lewis Field in Cleveland, Ohio. Plum Brook Station held the majority of fieldwork, containing 1,050 wetlands, 373 waterways, and 15 ponds. All GIS site data were provided in kml format so that any NASA user could view the resource in Google Earth. The information collected was used by NASA to evaluate a proposed wind farm at Plum Brook Station.

ECOLOGICAL RESTORATION

PROJECT HIGHLIGHT

ENVIROSCIENCE AND THE RIVERWORKS TEAM REMOVED TWO 100-YEAR-OLD LOW-HEAD DAMS ON THE CUYAHOGA RIVER IN CUYAHOGA FALLS, OHIO. THIS $1M PROJECT WAS PART OF AN OHIO EPA INITIATIVE TO REMOVE ABANDONED DAM STRUCTURES AND RESTORE FREE FLOWING RIVER CONDITIONS ALONG THE CUYAHOGA RIVER.

EnviroScience's award-winning designs for stream and wetland restoration recreate an ecological foundation to maximize the long-term recovery of these ecosystems. We want to invest our clients' funding where it will yield the greatest results. To accomplish this goal, our team takes a holistic approach that integrates all of the site's elements to achieve systemic recovery, water quality improvement, and ecological uplift. Our landscape approach is focused on reversing historical impacts while minimizing soil disturbance, creating a foundation for ecological recovery, and promoting nutrient assimilation, water quality, and habitat improvement. After our restoration projects are complete, post-construction monitoring demonstrates significant habitat improvements for fish, macroinvertebrates, and other species.

Our team's diversity of scientific expertise and construction experience informs all aspects of the restoration process. Every project we design is ecologically sound, constructible, and budget-conscious. In addition, our relationship with state and federal authorities ensures that necessary permits are obtained quickly and do not disrupt project schedules.

EnviroScience provides turnkey services in all areas of restoration, including assistance securing project funding. Since 2006, EnviroScience personnel have secured over $48M for conservation and restoration projects. We frequently work with nonprofit organizations, park districts, and municipalities to identify potential conservation and restoration opportunities, to finance and develop those projects, and to manage the acquisition and restoration efforts. In addition to these types of clients, EnviroScience has significant experience working for industrial clients to develop mitigation projects, meeting their regulatory needs. From initial concept, to grant assistance, permitting, design, construction, and monitoring, EnviroScience can address all aspects of the restoration process.

RiverWorks

We have performed many of our projects in a design-build capacity through our RiverWorks partnership. RiverWorks is a team of restoration biologists, engineers and construction specialists that combine their respective technical strengths to provide a truly multidisciplinary approach to restoration. The result is an unparalleled collaboration of talents in Northeast Ohio dedicated to ecological restoration since 2007.

"[I WANT TO] CONGRATULATE YOUR COMPANY ON THE FINE JOB OF "RE-ENGINEERING" HALEY'S DITCH… TURNING THE DITCH INTO A MEANDERING STREAM WITH A FLOOD PLAIN AND POOLS, COBBLESTONE RIVER BOTTOM, [RIFFLES] AND POOLS ALONG WITH HUNDREDS OF TREES WAS IMPRESSIVE."

- PERMIT WRITER, Ohio EPA

ECOLOGICAL RESTORATION SERVICES:

STREAMS

- Stream Restoration/Relocation
- Dam Removal/Restoration
- Stream Bank/Slope Stabilization
- Riparian Enhancement/Stabilization
- Morphological Assessment
- Erosion Monitoring & Assessment
- Hydrologic & Hydraulic Modeling
- Fish Passage at Stream Crossings
- Watershed Stability Assessments

WETLANDS

- Wetland Restoration/Enhancement
- Wetland Creation
- Hydrologic Budgets

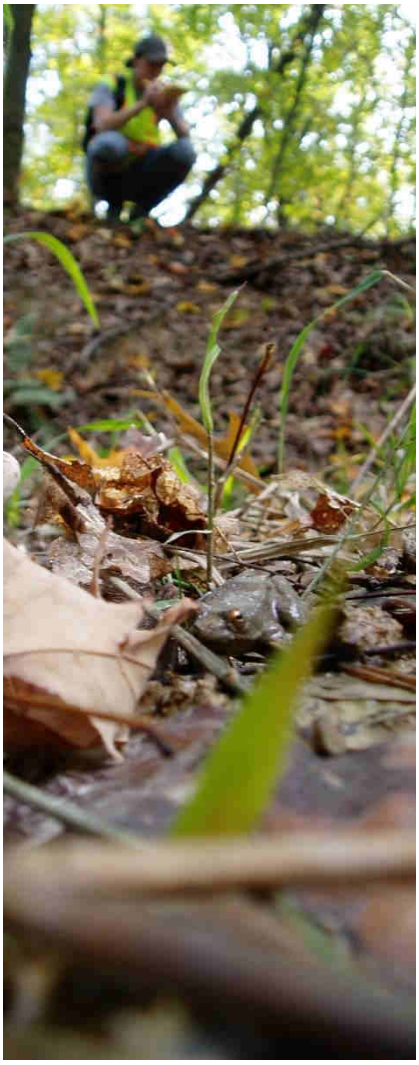
OTHER SERVICES

- Conceptual Restoration
- Wildlife Restoration
- Watershed Management & Analysis
- Ecological Storm Water Management
- Mitigation Site Evaluation
- Mitigation Plan Development
- Prairie Restoration
- Invasive Species Control
- Shoreline Enhancement/Stabilization
- Grant Writing
- Conservation Real Estate
- Expert Witness

PROJECT HIGHLIGHT: AURORA BRANCH RESTORATION

PICTURED: 2 WEEKS POST-RESTORATION

ENVIROSCIENCE AND THEIR RIVERWORKS PARTNERSHIP RESTORED OVER 7,000 FT OF THE AURORA BRANCH OF THE CHAGRIN RIVER AT A FORMER GOLF COURSE THAT WAS PURCHASED WITH CONSERVATION FUNDING. THE PROJECT REQUIREMENTS ONLY CALLED FOR ~3,500 FT OF RESTORATION, BUT DUE TO OUR INNOVATIVE APPROACH AND ABILITY TO SEE THE RESTORATION POTENTIAL OF THE SITE, THAT BENEFIT WAS DOUBLED FOR THE SAME COST. THE APPROACH CONSISTED OF RE-ATTACHING THE RIVER TO ITS HISTORIC FLOODPLAIN THROUGH A SERIES OF 31 GLIDE, RIFFLE, AND RUN STRUCTURES OF VARIABLE SIZE AND LENGTH. THE LAST RIFFLE CREATED FISH PASSAGE THROUGH A RAILROAD CULVERT THAT WAS ACTING AS A BARRIER TO MIGRATION. NUMEROUS WETLANDS WERE CREATED (PHOTO) AND HISTORIC OXBOWS RECONNECTED TO THE CHANNEL.



ENVIROSCIENCE'S TERRESTRIAL ECOLOGICAL SURVEYS, COUPLED WITH AQUATIC AND WETLAND SURVEYS, COMPLETE THE FULL RANGE OF ECOLOGICAL SERVICES OFTEN REQUIRED BY MANY DEPARTMENTS OF TRANSPORTATION (DOT).

TERRESTRIAL SURVEY SERVICES

EnviroScience ecologists are experienced in the area of terrestrial ecological survey including endangered species surveys. This service, coupled with aquatic and wetland surveys, complete the full range of ecological services often required by many Departments of Transportation (DOT). Terrestrial surveys are often required as part of DOT Level II and Level III transportation projects and other large-scale developments, and are useful to inventory wildlife for purposes of land management, recreational area planning, and the protection of state and federally listed species.

TERRESTRIAL SURVEY SERVICES:

VEGETATION: EnviroScience biologists use qualitative and quantitative vegetation survey techniques. Woody and herbaceous macrophytes are identified by vegetative class (canopy, understory, shrub, vine, and ground cover) within each plant community. Communities are described, in part, by dominant species.

AMPHIBIANS: EnviroScience biologist are skilled in common survey techniques for frogs, toads, and salamanders in all phases of their life-cycle. Visual surveys include: time-constrained searches, area-constrained searches, quadrat sampling, transect surveys, or road cruising for both individuals and their eggs. Terrestrial drift fences and pitfall traps are effective for sampling most amphibians. Aural surveys are used to document calling frogs and toads, while funnel traps are effective for all breeding amphibians including salamanders. Arboreal species can be captured using PVC traps, and all can be sampled using artificial cover objects (boards and tins).

REPTILES: EnviroScience herpetologists have completed snake, turtle, and lizard surveys in many states, including AZ, CA, FL, GA, IL, MD, MA, MI, NM, NV, OH, PA, TX, and WY. Terrestrial and semi-terrestrial reptiles are visually surveyed by searching for individuals, as well as signs (e.g., shells, sheds, tracks), during the activity season. Visual surveys, terrestrial drift fences and pitfall traps are effective for sampling most squamate reptiles. Reptiles can also be passively sampled using artificial cover objects (boards and tins). Habitat surveys, presence/absence surveys, agency coordination, population estimates, radiotracking, relocations, and exclusions.

BIRDS: EnviroScience biologists are skilled in winter, migration, and breeding bird surveys using audible and visual cues. Quantitative surveys using point counts and line transects, with or without audio-lure are used in various habitats to detect most birds (including waterfowl, shorebirds and raptors). Nocturnal birds such as most owls and nightjars can be surveyed after dusk.

MAMMALS: EnviroScience biologists are experienced in mammal survey, including direct visual and trail camera observation, observing of tracks and scat, mist netting, traps, sand-plots, and raptor pellet analysis.

OUR APPLICATORS ARE ALL BIOLOGISTS WHOSE KNOWLEDGE OF NATIVE AND NONNATIVE PLANTS ALLOWS THEM TO IDENTIFY, LOCATE, AND EFFECTIVELY KILL INVASIVE PLANTS WHILE MINIMIZING EFFECTS ON DESIRABLE SPECIES.

INVASIVE SPECIES CONTROL

Many land managers have issues with nonnative invasive species on their properties. Whether the project involves restoration, mitigation monitoring, or maintenance of existing natural areas, EnviroScience's certified applicators and servicemen can help you achieve your goals while meeting all regulatory requirements. A crucial difference is that our applicators are all biologists whose thorough knowledge of native and nonnative plants gives them the ability to identify, locate, and effectively kill invasive plants while minimizing effects on nontarget species. In addition, our applicators can select group-specific herbicides that will only affect broadleaf plants or grasses to provide additional safeguards against overspray.

EnviroScience has a team of certified applicators who are able to safely and effectively apply herbicides and pesticides throughout the Midwest. Our team has state certification application status in Ohio, New York, and Indiana, with the ability to obtain certification for other states. EnviroScience's licensed and skilled staff have experience in a wide range of invasive control methods in terrestrial and aquatic systems from one acre to 500 acres in size. EnviroScience has a full range of equipment to support our certified applicators, including backpack sprayers, ATV-mounted sprayers, and truck-mounted sprayers.

We evaluate sites and management goals to develop a management plan that is the most effective both ecologically and financially. Chemical control is most commonly performed with backpack sprayers to minimize impacts to nontarget species. Other methods include hand wicking, ATV broadcast spraying, cut stump, basal bark, and high-volume application. Mowing, cutting and burning can also be used to control invasive species in certain habitats.

EnviroScience also has the capability and experience with the use of Rotenone® to control carp and other undesirable fishes in lakes and ponds. Boat electrofishing allows our biologists to selectively remove only those fish while returning sport fish to the lake unharmed.

PROJECT HIGHLIGHT – CAMP RAVENNA JOINT MILITARY TRAINING CENTER

ENVIROSCIENCE CONDUCTED INVASIVE SPECIES CONTROL FOR RAVENNA JOINT MILITARY TRAINING CENTER IN NEWTON FALLS, OHIO. THE PROJECT INCLUDED 236 ACRES OF INVASIVE CONTROL OF AUTUMN OLIVE AND A FEW ACRES OF JAPANESE KNOTWEED. ENVIROSCIENCE'S APPLICATORS DOCUMENTED OTHER INVASIVE SPECIES AND THE LEVEL OF THREAT PRESENTED BY EACH, WHICH THE CLIENT WILL USE FOR FUTURE MANAGEMENT EFFORTS.

"THE WORK UNDER THIS TASK ORDER REQUIRED A VERY QUICK RESPONSE AND TURNAROUND OF DATA. ENVIROSCIENCE, INC...PROVIDED EXEMPLARY SERVICE BOTH IN TIMING AND QUALITY. OUR CUSTOMER (USACE-ST. LOUIS) WAS EXTREMELY PLEASED WITH THE EFFORT AND DATA PROVIDED."

— RANDY JENKINS, ARDL, INC.

ENDANGERED SPECIES SURVEYS

Rare, threatened, and endangered species can have a strong effect on project activities, timelines, and resulting costs. EnviroScience's years of experience has given us the expertise necessary to navigate and often complex regulatory process. Few companies have as many full-time federally permitted biologists on staff. Our biologists are experts in many taxa groups, including bats, mussels, reptiles and amphibians, fish, rare plants and the newly listed Guyandotte River and Big Sandy crayfish. EnviroScience biologists have significant experience completing habitat surveys, species inventories, acoustic surveys, radiotracking, relocations, and any other specialty services required by the agencies. This level of expertise and strong credibility with federal and state agencies allows EnviroScience to complete the coordination process in a much faster timeline.

For example, EnviroScience was a key partner with PennDOT to develop Pennsylvania's first programmatic agreement for federally endangered mussel species. This agreement reduced the state and federal agency review time from more than 150 days to less than 45 days for most projects within PennDOT's Bridge Program.

AGENCY COORDINATION SERVICES:

- Biological Assessment
- Preparation
- Avoidance & Conservation Measure Plan
- Alternatives Analysis
- Incidental Take Estimates

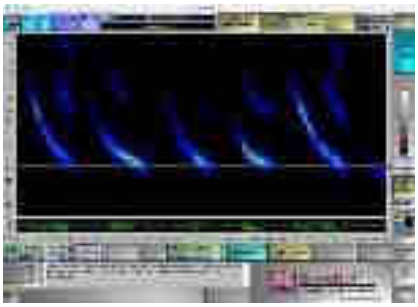
ENDANGERED SPECIES FIELD SURVEYS:

- Freshwater mussel surveys and translocations
- Indiana Bats, Virginia Big-Eared Bat, Northern Long-Eared Bat
- Burrowing owls, flying squirrels, and birds of prey
- Plant inventory
- Reptile and amphibian surveys (including Massasauga Rattlesnake surveys)
- Running Buffalo Clover surveys
- Crayfish surveys (including Guyandotte River and Big Sandy crayfish)





ENVIROSCIENCE BIOLOGISTS HAVE EXTENSIVE EXPERIENCE COMPLETING SURVEYS FOR NUMEROUS STATE AND FEDERALLY ENDANGERED AND THREATENED SPECIES.



DIRECTLY ABOVE: ACOUSTIC MONITORING SONOBAT SYSTEM

ENDANGERED BAT SURVEYS

BAT SERVICES

Bat species are an ever-increasing concern due to their rapidly diminishing populations. The USFWS has established a coordination and permitting structure to allow project activities to continue while ensuring that no harm is done to an imperiled species. Seasonal clearing restrictions and acoustic/mist net surveys are common requirements for projects that involve tree clearing. Early coordination with both the USFWS and state agencies is essential in order to avoid project delays or other restrictions.

EnviroScience biologists are consistently successful in navigating these coordination processes and survey requirements for projects of all types and sizes across the range of listed U.S. bats. Our clients include federal, state and local government agencies, coal, energy and industry companies, transportation departments, developers, and private companies. EnviroScience survey capabilities include:

- Full coordination with USFWS and state regulatory agencies
- Records Search and Desktop Review
- Habitat, Tree, and Potential Hibernacula Surveys
- Emergence Surveys
- Mist-net Surveys
- Acoustical Monitoring
- Radio Telemetry
- Hibernacula Surveys
- Habitat Conservation Plans
- Biological Assessments

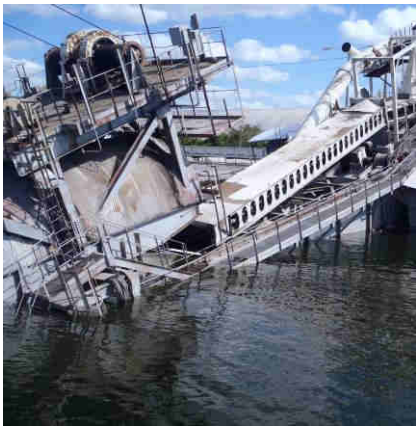
FEDERALLY ENDANGERED & THREATENED BATS

Listed bats for which coordination may be necessary include:

- Indiana bat
- Northern Long-eared bat
- Virginia Big-eared bat
- Gray bat

PROJECT HIGHLIGHT – CAMP RAVENNA BAT SURVEY

IN 2015 AND 2016, ENVIROSCIENCE COMPLETED A SITE-WIDE BAT SURVEY ON 24,000 ACRES AT THE CAMP RAVENNA JOINT MILITARY TRAINING CENTER TO ASSESS POPULATIONS OF THE INDIANA BAT AND THE NORTHERN LONG-EARED BAT. ENVIROSCIENCE BIOLOGISTS CONDUCTED 240 NET NIGHTS OVER TWO YEARS. A TOTAL OF 470 BATS OF FOUR SPECIES WERE CAPTURED, INCLUDING A SINGLE NORTHERN LONG-EARED BAT, WHICH WAS RADIO TRACKED TO A DIURNAL ROOST TREE WITHIN CAMP RAVENNA.



ECOLOGICAL RISK ASSESSMENT

Ecological Risk Assessments (ERA) are performed to evaluate the likelihood of adverse ecological effects occurring as a result of exposure to physical or chemical stressors. These stressors are defined as any biological, physical, or chemical factor that causes adverse responses in the environment. An ERA evaluates any potential harm that human activities have on living organisms within ecosystems. Within the framework of an Ecological Risk Assessment, scientific information is developed, organized and presented so that it is relevant to environmental decisions.

WHEN ARE ERAs CONDUCTED?

Ecological Risk Assessments are most often performed during the Remedial Investigation/Feasibility Study (RI/FS) phase of the Superfund response process. These risk assessments provide information regarding the interaction of stressors with the biological community at a site. During the ERA process, scientists develop exposure profiles to identify ecological receptors, such as tissues, organisms, populations, communities, and ecosystems. This receptor information is incorporated with available habitat and exposure pathways. The sources and distribution of stressors in the environment also are characterized.

The framework for an ERA consists of three phases (problem formulation, analysis, and risk characterization). The analysis consists of characterizing both the exposure and the effects to the environment. USEPA outlines the following eight steps as part of the ERA process:

- Screening Level – Problem Formulation and Ecological Effects Evaluation
- Screening Level – Preliminary Exposure Estimate and Risk Calculations
- Problem Formulation
- Study Design and Data Quality Objective Process
- Verification of Field Sampling Design
- Site Investigation and Data Analysis
- Risk Characterization
- Risk Management
- ERAs enable decision-makers to make better informed decisions about the management of ecological resources.

EnviroScience staff has the experience, personnel and equipment to complete ERA's from the Screening Level phase through the Risk Management. Many times, baseline information is collected during the emergency response to an incident and supplemented with information from the site investigation. Our emphasis in ecological monitoring in both aquatic and terrestrial settings allow us to complete these projects in house for our clients.

"...EnviroScience is extremely responsive and will do whatever it takes to get the job done correctly and the first time. They have been called out to respond to extreme emergencies for the railroad and have always come through when we need them."

— Environmental Remediation Manager, CSX Transportation

EMERGENCY RESPONSE

EnviroScience provides Emergency Response for Class I and short line rail carriers, petrochemical companies, and other industries throughout the United States. EnviroScience personnel are nationally recognized as experts in managing and mitigating large-scale environmental incidents. EnviroScience has project sites throughout the United States.

EnviroScience understands the challenges that potential responsible parties face as it frequently responds to major derailments, petroleum releases, chemical plant fires, and other natural disasters and investigates legacy sites. Whether providing ecological monitoring for released contaminants such as oil and industrial agents, or managing the cleanup effort, EnviroScience has the expertise and training to protect the environment, human health and safety, and our client's investments and reputation. EnviroScience can efficiently assess impacts, monitor the environment, and restore impacted ecosystems to pre-existing conditions.

EnviroScience has a strong working relationship with the major environmental consultants servicing the emergency response industry. Working side by side with firms such as ARCADIS, AMEC, CTEH, GeoSyntec and many others has fostered teamwork that produces the best possible outcome for clients. EnviroScience is well-versed in environmental regulations and has extensive experience coordinating with regulatory agencies within the National Incident Management System (NIMS) and Incident Command System (ICS). EnviroScience can provide Environmental Unit Leaders and other key positions to ensure clients are well-represented in the ICS. EnviroScience exceeds client expectations by carefully coordinating and negotiating directly with regulatory agencies on natural resource issues, and presenting defensible data to agency technical staff.

During most environmental incidents, response time is often one of the most critical components to success. EnviroScience maintains an on-call team 24 hours a day year round. With over 70 trained field staff and an extensive inventory of equipment and vehicles, EnviroScience has the capacity to mobilize quickly and for the duration of the emergency response activity. In addition, we are proud of our excellent safety record due to our training and comprehensive on-the-job safety standards. All of EnviroScience's staff are FRA and safety trained for railroad work and have extensive experience working in this industry.

PROJECT HIGHLIGHT – FLETCHERS CREEK

In January 2014, twenty-five cars containing phosphoric acid derailed into the Fletchers Creek in Florida. EnviroScience's team of scientists mobilized quickly in a first-response effort to reach the site. EnviroScience biologists provided water quality sampling, monitoring, performed fish and mussel impact surveys, and provided consultation on acid neutralization through the use of chemical buffers. After sampling, EnviroScience also prepared and implemented a restoration plan for over 8 impacted areas, including a tupelo swamp.

OIL, GAS, MINING & ENERGY INDUSTRIES

EnviroScience recognizes the environmental challenges of meeting America's energy requirements. Whether it is oil and gas development, coal mining, nuclear, FERC relicensing, wind power, or large corridor studies for energy infrastructure projects, EnviroScience has the reputation, staff, project experience and technical expertise to meet the challenges of today's energy projects in consultation with regulators to avoid costly mistakes. We currently work with some of the biggest names in the industry and bring this legacy experience to every project from day one.

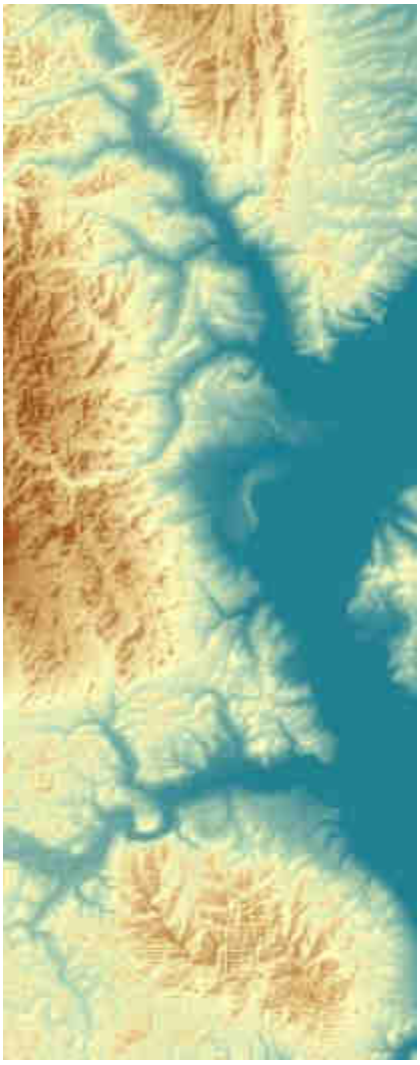
EnviroScience understands that with most energy projects, timing is critically important. Our staff has the experience to help guide clients with strategy and approaches to meet agency timelines so that temporal and monetary losses can be avoided. For example, our Environmental Inspection group provides inspection services on large pipeline projects to identify and correct erosion and permit requirement problems before they become a major issue. As a whole we have been performing baseline surveys, compiling permitting applications, monitoring new and existing sites, and assisting with all forms of environmental compliance since EnviroScience was established. Our extensive experience in both corridor and large acreage studies and informal to formal coordination is an asset to clients looking to complete projects in a timely and efficient manner.

Changes in USEPA regulations now require a higher level of environmental consideration for entities that withdraw large volumes of water from rivers and lakes. EnviroScience is accomplished and experienced in many areas such as: addressing intake issues; supporting extensive larval and adult fish studies, fish tissue, low-level mercury and other sampling; thermal and flow studies; and more.

other waters and identified potential endangered species habitat along a 16.4 mile long proposed pipeline corridor in Harrison and Tuscarawas Counties, Ohio. EnviroScience prepared a Biological Assessment, which was accepted and made part of a Biological Opinion.

KEY SERVICES:

- Wetland & Stream Delineation & Permitting
- Habitat Mitigation, Monitoring, & Restoration Services (Design-build)
- Habitat Surveys / Depth Surveys
- Fish 316(a) & 316(b) and Macroinvertebrate Sampling
- Water & Thermal Sampling
- 401/404 Permitting
- SMCRA Compliance
- Endangered Species Surveys & Coordination
- NPDES Tests & Compliance Services
- Stormwater Design & Inspection
- Industrial Permitting / Consulting
- Commercial & Environmental Diving / ROV Services
- Underwater Inspections / Intake Maintenance for Outfalls & Traveling Screens
- Emergency Response
- Emergency Response Planning & Preparedness



GEOGRAPHIC INFORMATION SYSTEM (GIS) SERVICES

EnviroScience leverages the power of Geographic Information Systems (GIS) to analyze, manage, and display environmental data. GIS is utilized in nearly 90% of EnviroScience projects, spanning all disciplines within the company. Our GIS analysts are capable of displaying data from many different sources and in many different formats, including local, state, and federal datasets, aerial and satellite imagery, digital elevation models (DEMs), CAD drawings, Google Earth KMZ files, and field collected GPS data. We are committed to staying current with the latest desktop and mobile GIS technology. Our mapping products include and help support projects involved with the following:

- Wetland Delineation, Mitigation, Monitoring, & Restoration
- Stream Restoration
- Utility Corridor Surveys
- Rare, Threatened, & Endangered Species Habitat Surveys
- Aquatic Thermal Plumes & Mixing Zones
- Bathymetric Surveys
- Dredging Analysis
- Qualitative & Quantitative Mussel Surveys
- Emergency Response
- Cultural Resource Analysis
- Watershed Analysis
- Water Quality & Habitat Impairment
- Storm Water Pollution Prevention Plans
- MS4 Outfall, NPDES, 401/404 Permitting
- Geospatial Prediction Modeling
- Soil Analysis
- Hydrography & Geomorphology
- Topographic Contour Mapping (6-inch interval and above)
- Shale Drilling Activity
- Groundwater Resources
- Landuse/Landcover Analysis
- Forest Management

GLOBAL POSITIONING SERVICES (GPS)

EnviroScience's reputation for excellence is reinforced by our dedication to maintaining a fleet of Trimble® GeoXT and GeoXH differential GPS receivers that allow for data collection, editing, and viewing of attribute information while in the field. These units are sub-meter accurate, and under favorable conditions, have been known to be accurate up to 6 inches. Our scientists collect field data with a GPS unit, differentially correct the data against known base stations, and export into ArcGIS® and AutoCAD® formats.

OUR STATE-OF-THE-ART GIS TECHNOLOGY ALLOWS OUR SCIENTISTS TO PRESENT LARGE AMOUNTS OF COMPLEX DATA QUICKLY AND IN EASILY UNDERSTOOD FORMATS.

PROJECT HIGHLIGHT

ENVIROSCIENCE CONTRACTED WITH THE OHIO ARMY NATIONAL GUARD (OHARNG) TO PROVIDE ENVIRONMENTAL CONSULTANCY SUPPORT FOR EVALUATING AND UPDATING THE EXISTING INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN (INRMP) AT THE CAMP RAVENNA JOINT MILITARY TRAINING CENTER (CRJMTC) IN PORTAGE AND TRUMBULL COUNTIES, OHIO. AS PART OF UPDATING THE INRMP, ENVIROSCIENCE WAS TASKED WITH UPDATING 22 MAPS AND RELATED SPATIAL DATA, PACKAGED WITHIN A COMPLETELY NEW, MODERN, MAP DESIGN.

ENVIROSCIENCE DRAWS ON A STRONG NETWORK OF UNIVERSITY FACULTY AND RESEARCH STAFF TO SUPPORT MANY OF OUR LAKE PROJECTS AS CONSULTING SCIENTISTS.

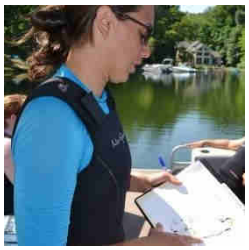
LAKE MANAGEMENT

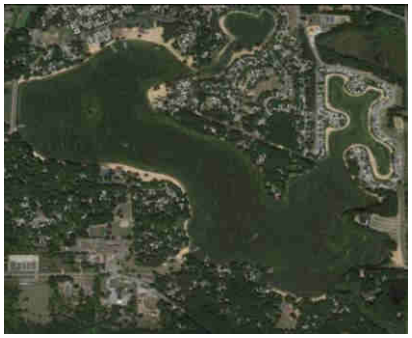
EnviroScience's lake management services range from full-scale watershed and lake diagnostic studies to invasive aquatic species identification and fisheries evaluations.

LAKE MANAGEMENT SERVICES:

- Harmful Algal Bloom Detection & Consulting
- Watershed Assessment
- Water Quality Testing
- Fishery Management
- Dredge Feasibility
- Lake Depth Mapping
- Lakescaping
- Aquatic & Shoreline Vegetative Surveys
- Bottom Contour Mapping
- Bottom Typing using Hydroacoustics
- Underwater Video
- Shoreline Restoration

As with many of our ecological projects, EnviroScience draws on a strong network of university faculty and research staff to support many of our lake projects as consulting scientists. Our partnership with some of the country's top experts in lake management and rehabilitation allows us to bring their expertise to a wide range of problems in our clients' lakes and reservoirs.





PROJECT HIGHLIGHT – MONTEREY LAKE

ENVIROSCIENCE PERFORMED LAKE DIAGNOSTIC SERVICES, INCLUDING A FISHERY SURVEY, A PLANKTON SAMPLING SURVEY, AND A BATHYMETRIC SURVEY, ON MONTEREY LAKE WITHIN THE SANDY PINES WILDERNESS TRAILS RESORT AND CAMPGROUND IN HOPKINS, MICHIGAN. IN TOTAL, 13 SPECIES OF FISH WERE COLLECTED IN THE STUDY AREA. RESULTS SHOWED AN IDEAL BALANCE OF LARGE (QUALITY) ADULTS RELATIVE TO SMALL (STOCK) LENGTH WITHIN THE LARGEMOUTH BASS AND WALLEYE POPULATIONS. PHYTOPLANKTON TAXA WERE IDENTIFIED AND SHOWED A TYPICAL DENSITY. THE BATHYMETRY SURVEY SHOWED NO AREAS OF CONCERN.

ENVIRONMENTAL INSPECTION & STORMWATER SERVICES

EnviroScience's Stormwater Team includes 13 experts who provide comprehensive services to help industry and municipal clients interpret and meet regulations, implement cost-effective control measures, and develop a customized stormwater management plan. Our professionals include two former Ohio EPA Surface Water Engineers and a former Ohio EPA Aquatic Biologist, each with over 30 years of experience. Our experts are CPESC and CESSWI certified with professional backgrounds in Engineering, Biology, Geology, GIS, and Water Quality Science.

Our environmental inspectors work with utility companies, oil and gas companies, and electric companies on construction/linear projects to help build their environmental compliance programs at the field level, focusing on stormwater and USACE wetland BMPs. Our staff can bridge the communication gap between the design/planning/management team and field crews by understanding the requirements of the permits at the planning stage and translating the regulations to ensure field personnel understand what they must do to stay in compliance. Not only do we perform the weekly and rain event inspections required by the SWPPP/OEPA, we identify potential compliance issues and help the design/planning/management team pro-actively find solutions and develop protocols.

SERVICES:

- SWPPP Documentation & Reporting
- Daily Construction Oversight
- Weekly & Storm Event Inspections
- Coordination with Government, State & Local Agencies
- Corrective Action for Non-compliance Issues
- Post-construction Inspections, Reports, & Mitigation Support
- Ecological Risk Assessments
- Guidance during Construction within the Boundaries of Wetlands, Streams, and other Sensitive Areas and Habitat
- MS4 Permits
- Industrial MSGP
- Green Infrastructure
-

"THE WORKING RELATIONSHIP BETWEEN THE WAYNE NATIONAL FOREST, DOMINION EAST OHIO GAS, ENVIROSCIENCE INC. AND SUB-CONTRACTORS HAS BEEN INVALUABLE. THE HIGH LEVEL OF COOPERATION AMONGST THESE PARTIES HAS RESULTED IN THE PROJECTS BEING IN FULL COMPLIANCE. IN SOME INSTANCES, WORK ACTIVITIES HAVE EXCEEDED ESTABLISHED STANDARDS..."

— DEVELA J. CLARK, U.S. Forest Service to Dominion East Ohio

PROJECT HIGHLIGHT – DOMINION EAST OHIO GAS

ENVIROSCIENCE HOLDS TWO MASTER SERVICE AGREEMENTS (MSAS) WITH DOMINION EAST OHIO GAS. UNDER THE MSAS, ENVIROSCIENCE IS RESPONSIBLE FOR ALL ENVIRONMENTAL COORDINATION FOR PIPELINE CONSTRUCTION. OUR ENVIRONMENTAL INSPECTORS HAVE COMPLETED WORK ON MORE THAN 100 MILES OF PIPELINE SO FAR, TOTALING OVER 700 PROJECTS.

"...THANK YOU FOR ALL THE HELP AND GUIDANCE IN VERIFYING THE CURRENT STORMWATER OUTFALLS AND IDENTIFYING POSSIBLY A COUPLE OF NEW ONES... WE KNOW IT WAS QUITE A CHALLENGE WITH THE OVERGROWTH OF TREES AND BRIERS...THE PHOTOS AND DETAILED DESCRIPTION OF EACH LOCATION WILL BE GREATLY BENEFICIAL IN MANAGING AND COMPLYING WITH OUR PERMIT. THIS PROJECT WILL ALSO ASSIST US IN BEING PROACTIVE WITH ANY CORRECTIVE ACTIONS OR FUTURE REQUIREMENTS. GREAT WORK!"

— Industrial Site

ENVIRONMENTAL COMPLIANCE SERVICES

EnviroScience is focused on providing clients with efficient, cost-conscious, and time-sensitive solutions to environmental challenges that save clients time, reduce costs, and ensure high-quality work products. Our environmental scientists and engineers offer services to the private sector as well as federal, state, and municipal agencies. Our dedication and technical excellence has established EnviroScience as the "go-to" firm for our clients. We are committed to developing environmental compliance solutions with your needs in mind.

NPDES PERMITTING
(National Pollutant Discharge Elimination System)

- Individual, General, & Stormwater
- Permit-to-Install (PTIs)
- Stormwater Construction, MS4, Inspection, & BMPs
- Process Water Treatment Devices
- Commercial Wastewater Systems
- Toxicity Evaluations (TIE/TRE)
- Antidegradation Permitting
- 316(a) & 316(b) Studies & Compliance
- Water Quality Monitoring & Assessment

DUE DILIGENCE

- Phase I / Phase II ESA
- NEPA Environmental Planning & Impact Assessment
- Asbestos & Lead Based Paint Assessment

PLANS

- Stormwater Pollution Prevention Plans (SWPPP)
- Spill Prevention Control & Countermeasure (SPCC) Plans
- Sludge Management Plans
- Waste Contingency Plans
- Emergency Response Plans

SOLID & HAZARDOUS WASTE

- Site Assessment & Characterization
- Feasibility Studies
- Remediation
- Waste Management
- Petroleum Releases
- UST/AST Closure & Compliance

RISK ASSESSMENT

- Human Health
- Ecological
- Chemical Fate & Transport
- Contaminant Chemistry
- Environmental Sampling in all Media

TRAINING

- Stormwater
- SPCC
- Hazardous Waste & Universal Waste
- Environmental Awareness

OTHER

- Surface Mining Control & Reclamation Act (SMCRA) Permitting & Compliance
- Reporting (SARA, TSCA)
- Incident Command System (ICS)
- Litigation Support
- Environmental Compliance Auditing
- Oily Waste Treatments

PROJECT SUMMARIES



ECOLOGICAL SURVEYS AT PLUM BROOK STATION & LEWIS FIELD

Sandusky, Ohio & Cleveland, Ohio

Client
NASA, under contract with Leidos

Key Services Provided
- Avian Surveys
- Bat Surveys
- Rare Plant Surveys
- Reptile/Amphibian Surveys
- Fish Surveys
- Plant Community Survey
- Species Management Plan

Contact
Jen Thomas
(330) 761-8910

Project Cost
$300,000

Project Duration
April 2016- March 2017

ES Key Staff
Jamie Willaman
Michael Liptak, Ph.D.
Tim Walters, Ph.D.
Mary Gilmore
Brian Slaby
Nathan Knowles
Brooke Harrison
Ann Gilmore
Teal Richards-Dimitrie
Paul Anderson
Brad Bartelme
Alex Valigosky
Ben Little
Lisa Regula Meyer
Lois Terveen
Mike Gilligan
Jerry Weidmann

NASA facilities are required to maintain current records of species protected by the Endangered Species Act (ESA) and develop programs to manage any protected species and their critical habitat present on NASA property. To facilitate NASA Glenn Research Center's compliance with the ESA and NASA policies, EnviroScience, Inc. and Leidos, Inc. proposed a strategy for the identification and management of protected species at the following facilities: Lewis Field, approximately 350 acres in Cleveland, and Plum Brook Station (PBS), approximately 6,400 acres in Sandusky, Ohio.

The strategy consists of three interrelated tasks:

1) Perform biological surveys at Lewis Field and PBS to provide current records of protected species at these facilities.
2) Update geographic information system (GIS) data layers identifying terrestrial plant communities and aquatic habitats, and incorporating locations of protected species at each facility.
3) Update the management plan for the protected species, utilizing the GIS data as a management tool.

Throughout 2016, EnviroScience biologists performed surveys of multiple taxa groups at both facilities. Surveys were performed to document birds, bats, reptiles/amphibians, fish, rare plants, butterflies, moths, and vegetative communities at each site, and technical reports were prepared for each survey. In addition, EnviroScience made recommendations for site management to maintain and improve habitat for protected species and important communities. These surveys and recommendations were compiled into a multi-volume technical report for NASA to use in its future management of natural areas on both properties.

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ODOT WESTERN MANAGEMENT UNIT BAT MITIGATION

Pickaway and Highland Counties, Ohio

Client
Ohio Department of Transportation

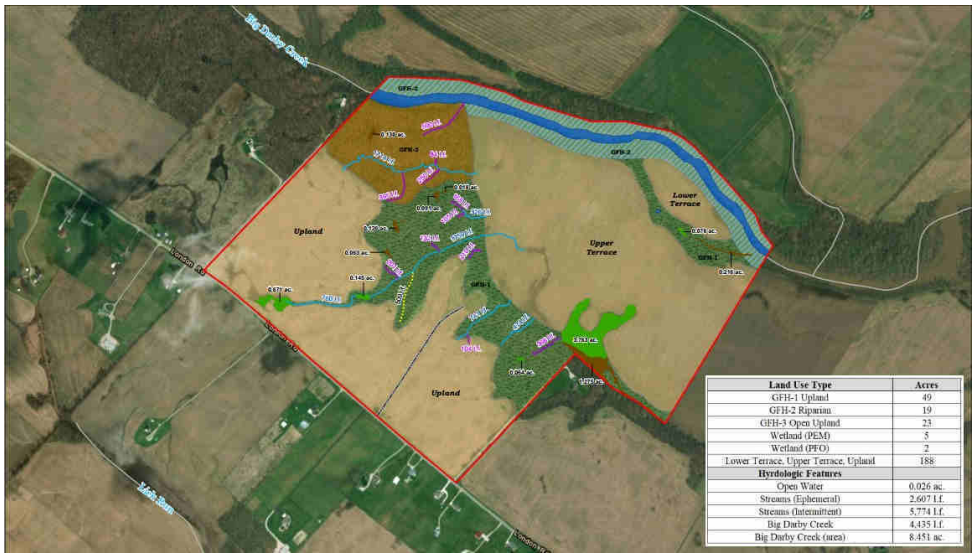
ES Project No. 8899

Key Services Provided
- Bat Habitat Property Identification
- GIS and In-Field Habitat Assessment
- NEPA Documentation
- Surveying
- Environmental Assessment
- Conservation Plan and Stewardship Plan Development

Project Duration
2018-2020

Project Cost
$5M

Key Staff
Neal Hess
Mary Gilmore
Greg Zimmerman
Jamie Willaman
Greg Hocevar
Brendan Morgan
Ann Gilmore



EnviroScience, Inc. was tasked with providing a minimum of 525 acres of bat habitat mitigation within ODOT's designated Western Management Unit (WMU). EnviroScience led this effort in collaboration with team members Appalachia Ohio Alliance, a nonprofit conservation organization providing long-term conservation stewardship, and The Conservation Fund, a nonprofit conservation organization providing short-term financing and consultation services.

Two properties were acquired to meet ODOT's WMU bat mitigation totaling almost 600 acres. Both properties provide high-quality bat mitigation habitat, including the protection of area with confirmed Indiana bat existence or in close proximity to known maternity colony areas.

Services provided by EnviroScience and its team members and subcontractors included bat habitat property identification, GIS and in-field habitat assessments, NEPA documentation, property surveying, environmental assessments, development of Conservation Plans and property Stewardship Plans, performance of appraisals and related due diligence by prequalified ODOT personnel, and the innovative use of temporary bridge loan financing to purchase the properties while waiting for ODOT reimbursement.

After the acquisition, EnviroScience performed or oversaw habitat improvements on the purchased properties, including prairie planting, reforestation, debris removal, gate installation, and invasive species management.

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BIOLOGICAL ASSESSMENT AND USFWS COORDINATION FOR INDIANA AND NORTHERN LONG-EARED BATS

Portsmouth Bypass Project - SCI-823-0.00 PID 19415; 16 mile Transportation Corridor

Client
Ohio Department of Transportation (ODOT)

E.S. Project No. 6176

Key Services Provided
- Species Research
- Document Development
- Mapping in GIS
- Impact Assessment
- Effects Determination

Contact
Matt Raymond

Project Duration
2013-2015

ES Project Cost
$39,930.00

Total Project Cost
$60,142.00

ES Key Staff
Greg Zimmerman
Jamie Willaman
Mary Mahoney

ODOT contracted EnviroScience, Inc. to conduct a Biological Assessment for their proposed design-build four-lane limited-access highway/bypass of Portsmouth, Ohio, part of the Appalachian Development Highway system. The proposed corridor is approximately 16 miles in length, bypassing approximately 26 miles of US 52 and US 23 through Portsmouth, Ohio.

EnviroScience had previously conducted mist-net surveys in compliance with the USFWS Summer Survey Protocol for the Presence/Absence of Indiana Bats on the project area and was highly familiar with both the project corridor and the local bat population.

In coordination with both ODOT and the USFWS, EnviroScience developed a formal Biological Assessment that included project federal nexus and consultation history; an analysis of the life histories of the Indiana and Northern Long-eared Bat, including the most up to date research on the species; a summary of the environmental baseline of the project area; a detail of the project construction and timeline; a determined project action area based on species life history information and project construction details; a full effects analysis, including direct, indirect, and cumulative impacts; a minimization and mitigation strategy; and a final effects determination. Along with the developed document, the EnviroScience team created multiple maps in GIS to demonstrate current land uses, bat population information, and action area parameters.

This project involved intensive coordination with ODOT and amongst the EnviroScience team. Upon USFWS review, their requested comments and modifications were minimal, and a formal Biological Opinion was issued that accepted EnviroScience's analysis and determination of the effects on species.

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ENDANGERED FRESHWATER MUSSEL SALVAGE AND RELOCATION FOR THE PENNDOT HUNTER STATION BRIDGE REPLACEMENT PROJECT

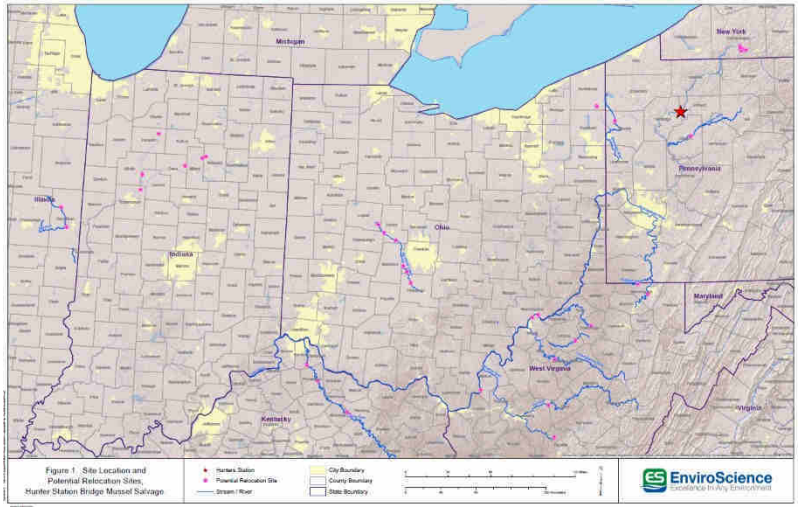

Figure 1. Site Location and Potential Relocation Sites, Hunter Station Bridge Mussel Salvage

Clients
PennDOT District 1-0
FHWA
GAI, SAI, Michael Baker

ES Project No. (Multi.)

Locations:
Tionesta, PA (Salvage)
OH, PA, NY, WV, KY, IN, IL, IA, Seneca Nation of Indians (Relocations)

Key Services Provided
- Mussel Salvage Plan
- Endangered Mussel Salvage and Relocation
- Coordination and Training of 10 entities and >30 persons

Contact
Autumn Kelly
PennDOT District 1-0

Project Duration
2014 - 2020

ES Project Cost
Estimated $1,200,000

ES Key Staff
Greg Zimmerman
Dr. Marty Huehner
Ryan Schwegman
Matt Johnson
Dale Dunford
Patrick Evankovich
Nick Shoots
Phil Mathias
Jeff Niehaus
Tim Willaman
Jordan Findley
Alex Valigosky
Melissa Vaccarino
Carl Burkey
Frank Moger
Jamie Willaman
Joanne Pem

This project likely represents the largest endangered species salvage and reintroduction effort of adult animals ever completed in the world. EnviroScience, Inc. is FHWA and PennDOT District 1-0's lead contractor coordinating and performing the endangered mussel salvage, relocation, and monitoring for the Hunter Station Bridge Replacement Project in northwestern Pennsylvania. The project footprint includes a portion of the largest known population of endangered Clubshell and Northern Riffleshell globally, including over 190,000 mussels, with 70% of those being endangered species. EnviroScience and its partners completed salvaging, relocating, and monitoring federally and state endangered as well as non-listed mussels as a term and condition of the USFWS Hunter Station Biological Opinion. This project is unique because the federally listed mussel species are being relocated to a suitable habitat to re-establish or augment existing populations throughout their historic ranges in PA, OH, NY, WV, KY, IN, IL, IA, and including the Seneca Nation of Indians. The mussel salvage effort began in 2015 and continued into 2017, with the monitoring of relocated populations continuing for seven additional years, post-relocation.

EnviroScience project manager Greg Zimmerman directed the efforts of over 25 EnviroScience staff, including 5 malacologists, 10 divers, and 10 topside tagging and processing staff. In addition to EnviroScience staff, EnviroScience trained and managed the efforts of 40 additional staff from other agencies, subcontractors, and partners, including PennDOT, FHWA, USFWS, Western Pennsylvania Conservancy, U.S. Forest Service, and nine state agencies. Mr. Zimmerman will continue monitoring oversight over the coming years. Key project components included major coordination activities, developing a mussel salvage and monitoring plan, water quality sampling, training and QA/QC of field personnel, mussel salvage (95% diving), processing, data collection, marking and tagging, packing, and transporting mussels across the country, and reporting. The final count was 130,258 mussels salvaged from the project over the two years.

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FRESHWATER MUSSEL SURVEYS/RELOCATION, BIOLOGICAL ASSESSMENT, USFWS/STATE FORMAL CONSULTATION, & SEDIMENT MONITORING

Kanawha River Near Pratt, WV

West Virginia American Water proposed placing an 8-inch water pipeline 284m (931ft) across the Kanawha River near Hansford, WV to serve the approximately 2,000 residents of Pratt and outlying areas with reliable drinking water. The community's health was at risk due to its inability to produce drinking water that meets state and federal standards.

Hatch Mott MacDonald, the consulting engineer, contracted EnviroScience, Inc. to conduct two freshwater mussel surveys (preferred and alternate locations) during spring and early summer of 2013. The surveys found federally endangered mussels (Fanshell, *Cyprogenia stegaria*, and Pink Mucket, *Lampsilis abrupta*) at both locations.

Since the location's characteristics precluded Horizontal Directional Drilling, trenching by a barge-mounted clamshell bucket was the final selected construction alternative to install the waterline into the riverbed. The presence of the endangered mussel species and public health concerns for the Pratt community precipitated an emergency formal consultation (normally a 4-month process) with USFWS. EnviroScience developed the Biological Assessment document to begin the formal consultation process by late summer of 2013. Approval for relocating freshwater mussels from the water line's path was granted in early fall 2013. EnviroScience immediately mobilized a large field team to successfully relocate a total of 1,434 mussels of 26 species, including the federally endangered species. These mussels were tagged before placing them in the relocation site for later identification. In the summer of 2014, we documented changes to the native substrate using video equipment. We will continue monitoring the tagged mussels through 2018 to assess the effectiveness of the relocation effort.

This project demonstrates how EnviroScience can quickly adapt to the emerging needs of complex situations to promptly produce positive results and help balance the needs of communities and industry with USFWS and State wildlife regulations.

EnviroScience
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Client
West Virginia American Water through Hatch Mott McDonald

ES Project No. 5937

Location
Kanawha County, WV

Key Services Provided
- Safety & Dive Plan
- Three Mussel Surveys
- Biological Assessment
- USFWS / State Formal Consultation
- Mussel Relocation
- Sediment Monitoring
- Mussel Monitoring
- GIS Services

Contact
Gary Facemyer
304-356-3011
gary.facemyer@hatchmott.com

Project Duration
2013 - 2018

ES Project Cost
Est. $230,000

ES Key Staff
Greg Zimmerman
Martin Huehner
Ryan Schwegman
Tim Willaman
Dale Dunford
Patrick Evankovich

ENDANGERED CRAYFISH SURVEY

Tug Fork River, Naugatuck, Mingo County, WV

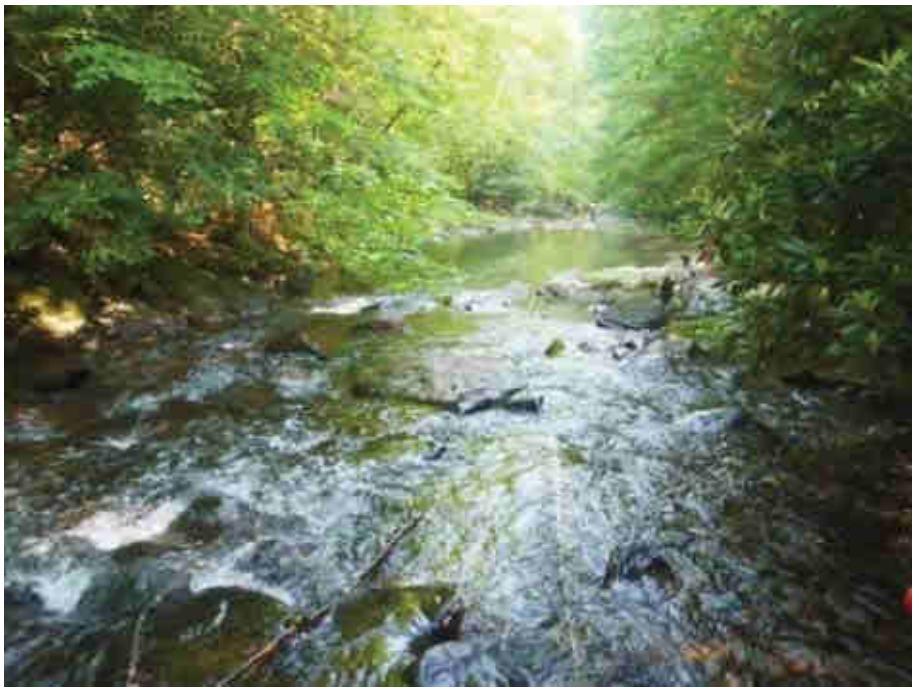
Client
E.L. Robinson

Key Services Provided
- Survey Plan Preparation
- Crayfish Survey
- Report
- Agency Coordination

Contact
Mark McGettigan, P.E.
(304) 776-7473

Project Duration
July 2016

ES Key Staff
Nicole Jordan



Typical stream habitat for the Big Sandy and Guyandotte River crayfish

The Mingo County Public Service District has plans for a project that requires approximately 40 feet of sheet pile wall to be installed along the bank of the Tug Fork River in Mingo County, West Virginia. EnviroScience, Inc. completed surveys for the federally threatened Big Sandy River crayfish (*Cambarus callainus*) in the Tug Fork River in July 2016. These newly listed species are found only in a few watersheds in West Virginia, Kentucky, and Virginia. EnviroScience conducted the survey using the Big Sandy and Guyandotte River Crayfish Survey Protocol issued by the U.S. Fish and Wildlife Service in May 2016, with slight modifications for water depth and under an approved survey plan.

Due to the extreme depth and high flows in the stream, the seining had to be completed by divers. Water quality parameters were recorded using a YSI ProPlus and a Hach Turbidity Meter, and a Qualitative Habitat Evaluation Index (QHEI) was completed. Due to poor habitat, no crayfish were found in the study area, despite significant survey effort.

EnviroScience completed the survey in one day and submitted a report to the client within one week of completing the field work. This rapid turnaround allowed the client to coordinate quickly with various agencies regarding their project.

EnviroScience
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ECOLOGICAL REVIEW OF CORRIDORS

Various Counties, Ohio

EnviroScience, Inc. has held multiple Master Service Agreements (MSAs) with The East Ohio Gas Company and Dominion Resources since 2010. As part of these MSAs, EnviroScience is responsible for all environmental coordination required before pipeline installation, pipeline replacement, and natural gas processing station projects. Environmental coordination for these projects may include wetland delineation, endangered species consultation, Nationwide permitting, 401/404 permitting, Ohio Power Siting Board (OPSB) application preparation, stormwater pollution prevention plan (SWPPP) preparation, Notice of Intent for the National Pollutant Discharge Elimination System General Permit, Ohio Historic Preservation Office desktop review, and specific coordination with local municipalities. Through these MSAs, EnviroScience receives up to 175 projects a year. Due to the high volume of projects and urgent nature of some gas line projects, EnviroScience personnel must be well organized, timely, responsive, and accessible to the client.

Under the MSAs, there have been up to thirteen projects received in one day. For these projects, fieldwork and initial reporting are completed within two weeks from the award date. All further environmental coordination documents are required approximately one month following the initial report submittal. EnviroScience successfully and accurately completes all projects and reporting within the designated time frames. For urgent projects, environmental clearances must be received as quickly as possible. This urgency may mean environmental coordination tasks, which begin with the initial fieldwork and carry through to the permit applications that require completion within seven business days. To accomplish this, EnviroScience has a large team of wetland scientists who are organized, efficient, and knowledgeable. EnviroScience receives the annual renewal of the MSA due to the high-quality product generated for the client and the ability to stay within budget.

Client
Dominion Resources/
The East Ohio Gas Co.

Key Services Provided
- Wetland Delineation
- Endangered Species Habitat Assessment and Coordination
- 404/401 Permitting
- OPSB Document Preparation
- Preparation of SWPPP
- Local Coordination

Contact
Tara Buzzelli
(330) 664-2579

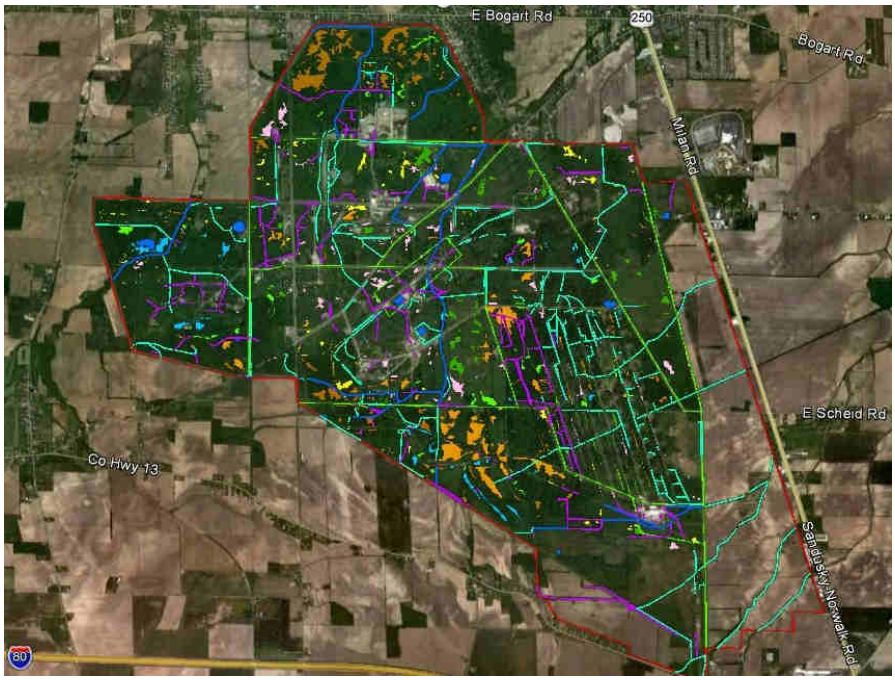
Project Duration
2010 - Current

ES Key Staff
Emma Kennedy
Laura Sayre

EnviroScience
EnviroScienceInc.com

WETLAND AND STREAM DELINEATION OF OVER 6,700 ACRES AT NASA FACILITIES

Plum Brook Station and Lewis Field



In 2011-2012, EnviroScience, Inc. delineated wetlands and other waters on two NASA properties: the 6,431-acre NASA Plum Brook Station in Sandusky, Ohio, and the 300-acre NASA Lewis Field in Cleveland, Ohio. Plum Brook Station contains a diverse assemblage of vegetative communities and a high number of rare, threatened, and endangered species, while Lewis Field is a highly urbanized area with a small amount of natural habitat remaining, including a hemlock ravine forest.

EnviroScience's team of highly trained wetland delineators was able to devote the resources to delineate the large project areas efficiently. Plum Brook Station was divided into ten priority areas and delineated separately to provide NASA data throughout the project.

Plum Brook Station contained 1,050 wetlands (over 400 acres), 373 waterways (over 300,000 linear feet), and 15 ponds (approximately 15 acres). Lewis Field contained 17 wetlands totaling 2.1 acres, 16 streams totaling over 7,000 linear feet, and one pond. All site data were compiled using ArcGIS® and provided to the client to help inform NASA during its decision-making process for future use of the sites. The GIS data were also provided in kml format so that any NASA user could view the resources using Google Earth.

Because of EnviroScience biologists' technical skills, several new locations for rare, threatened, and endangered plants were found at Plum Brook Station during the fieldwork. NASA is using the information collected as part of its siting process for a proposed wind farm at Plum Brook Station.

Client
NASA
under contract with SAIC

Key Services Provided
- Wetland Delineation
- Wetland Functional Assessment
- GIS Mapping

Contact
Ms. Jen Thomas
(419) 621-2114
jennifer.thomas@nasa.gov

Project Duration
June 2011-Nov 2012

Total ES Project Cost
$287,000

ES Key Staff
Dr. Michael Liptak
Dr. Tim Walters
Emma Kennedy
Laura Sayre
Max Koran

EnviroScience
www.EnviroScienceInc.com

WETLAND MITIGATION SERVICES

NEORSD EUCLID CREEK AND DUGWAY STORAGE TUNNEL DEWATERING SYSTEM PROJECT

Since 2010, EnviroScience, Inc. has been working with NEORSD to complete several phases of the Euclid Creek and Dugway Storage Tunnel Dewatering System Project (ECT/DST). The ECT/DST project is part of a massive combined sewer overflow control program. At completion, this system will capture combined sewer overflows during rain events for treatment at the EWWTP. Wetland mitigation was required at two sites (onsite ECT/DST, offsite Bratenahl) due to impacts to wetlands associated with the ECT/DST project.

Before construction, EnviroScience performed a delineation of the 28-acre ECT/DST site in Bratenahl, Cuyahoga County, Ohio, in spring 2010. An Indiana bat mist-net survey was completed in summer 2010, and a mature tree survey was conducted at the Bratenahl mitigation site in fall 2010. Section 404 and 401 applications were submitted in fall 2010 and received approval and authorization in spring 2011 for wetland impacts resulting from the proposed project.

Onsite wetland mitigation construction commenced at the ECT/DST site and the Bratenahl site in January and February 2012. A total of 0.69 acres of wetland was created between the two sites, which also included two vernal pool habitats for salamanders. The sites were planted with native wetland vegetation in 2012. Wetland mitigation monitoring, including invasive species management, commenced in 2013 and will continue for 10 years through 2022.

Client
Northeast Ohio Regional Sewer District

ES Project No. 4311

Key Services Provided
- Onsite Wetland Mitigation Construction
- Wetland Delineations
- Project Permitting
- Floristic Survey
- Mature Tree Survey
- Indiana Bat Survey
- Wetland Mitigation Monitoring
- VIBI
- Invasive Plant Eradication
- Agency Coordination

Contact
Robin Halperin
216-881-6600

Project Duration
2010 – Present

ES Design and Construction Cost
$167,898.08

ES Total Project Cost
$331,494.11

ES Key Staff
Dr. Michael Liptak
Julie Bingham
Jeff Niehaus
Dr. Tim Walters
Jamie Willaman
James Sargiovanni

EnviroScience
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16.4 MILE WETLAND & STREAM DELINEATION, PERMITTING, AND OTHER ECOLOGICAL SERVICES FOR PIPELINE INSTALLATION

Western Access II

EnviroScience, Inc. (ES) delineated wetlands and other waters and identified potential endangered species habitat along a 16.4 mile long (200 feet wide) proposed pipeline corridor in Harrison and Tuscarawas Counties, Ohio. Portions of the corridor were located within the existing right-of-way, and portions were located within the new right-of-way. The project area contained 61 wetlands (10.5 acres), 79 waterways (17,000 linear feet), 2 ponds (0.06 acres), and 304 trees that could potentially provide habitat for threatened and endangered bats. All site data were compiled using ArcGIS and provided to the client before the due date.

As part of the project, ES attended weekly meetings with the client to discuss the progress and advise on potential problems. Throughout the project, ES coordinated with the Ohio Department of Natural Resources (ODNR), U.S. Fish and Wildlife (USFWS), Ohio Historic Preservation Office, and the Muskingum Watershed Conservation District to receive various approvals and ensure the project complied. Coordination with the ODNR required EnviroScience to perform a point count survey for the upland sandpiper and a Phase I mussel survey on two streams. EnviroScience also prepared a Stormwater Pollution Prevention Plan, an application for a Nationwide Permit (NWP #12) through the U.S. Army Corps of Engineers (USACE), and an Individual 401 Water Quality Certification through the Ohio Environmental Protection Agency (OEPA). ES provided timely updates and responses to both the USACE and OEPA's questions through the permitting process. The most significant issue during permitting was the applicant's desire to clear approximately 90 acres of forest between April 1 and October 1. EnviroScience developed several options on how to proceed for the applicant. The applicant decided to assume the presence of threatened and endangered bats and prepare a Biological Assessment (BA). EnviroScience prepared the BA according to the applicant's strict deadline and submitted it to USACE and USFWS in under one month. The BA was accepted and made part of a Biological Opinion (BO), and the final permits were issued. As part of the issued NWP and BO, ES had to monitor all onsite summer tree clearing activities to ensure the contractors did not clear more than the proposed forested acreage and that the take of threatened and endangered bats was kept below the permitted number. After construction was completed, ES went back to the project area to ensure all wetlands and streams were replaced as specified in the permits. This monitoring continued for five years.

Because of their dedication, technical skill, and knowledge of regulations, ES biologists could meet or exceed all project deadlines and provide the client with valuable insight regarding environmental compliance, saving the client time and money.

Client
The East Ohio Gas Company

Key Services Provided
- Wetland & Stream Delineation
- GIS Mapping
- Nationwide Permit
- Individual 401 Permit
- Endangered Species Coordination
- Historic Coordination
- Stormwater Plan
- Upland Sandpiper Survey
- Mussel Survey
- Biological Assessment

Contact
Ms. Tara Buzzelli
(330) 664-2579
Tara.E.Buzelli@dom.com

Project Duration
June 2014-Sept. 2015

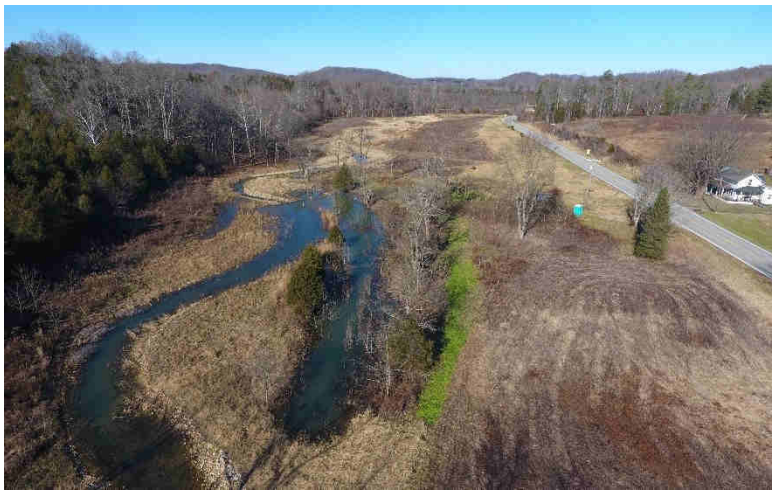
Total ES Project Cost
$200,000

Key Staff
Laura Sayre
Emma Kennedy
Ann Gilmore
Mary Gilmore
Brooke Harrison
Jamie Willaman

EnviroScience
www.EnviroScienceInc.com

STRAIT CREEK STREAM AND WETLAND RESTORATION PROJECT

Sinking Spring, Ohio



Client
The Nature Conservancy

Key Services
- Mitigation Design, Plan Development, and IRT Coordination
- USACE NWP
- Hydraulic Modeling
- Stream Restoration
- Wetland Restoration
- Invasive Species Management

Contact
Mr. Devin Schenk
Mitigation Program Manager
The Nature Conservancy
(513) 324-7363
dschenk@tnc.org

Project Duration
2017-2019

Total Project Cost
$1,200,000

Key Staff
Julie Bingham
Neal Hess
Sheila Rayman, P.E.
Angelina Hotz, P.E.
Jeff Niehaus

EnviroScience, Inc. was the prime contractor providing design-build stream and wetland restoration services for The Nature Conservancy's (TNC) first Ohio In-Lieu Fee Mitigation program restoration project. The project is in Adams County, Ohio, at TNC's Edge of Appalachia Preserve. The project restored 7,260 linear feet (LF) of Strait Creek, which Ohio EPA classifies as an Exceptional Warmwater Habitat (EWH) stream. Over 27 acres of riparian buffer is also being restored and enhanced, as well as 1.711 acres of riparian wetlands.

For this project, EnviroScience provided the following services: site assessment, wetland delineation, fish and macroinvertebrate assessment, 30% and 60% engineering plan design, soil management plan, planting plan design, tree removal coordination, invasive species management, Clean Water Act permitting, SWPPP design and implementation, local government coordination, ODOT right of way permitting, construction RFP development and administration, construction contractor selection assistance and contracting, bonding, vegetation contractor selection and oversight, stream construction oversight, and assisting TNC with components of the Mitigation Plan preparation and responses to Interagency Review Team (IRT) comments.

This project had many unique elements and challenges. First, a beaver impoundment on Strait Creek at the upstream end of the project was incorporated into EnviroScience's restoration design. Although we included a stream grade control riffle just downstream of the beaver dam for long-term stream stability, we believed incorporation of the beaver dam was important for their many ecosystem benefits. Second, the project design included developing over-deep pools with the incorporation of many different types of woody habitat within the pools, particularly for fish habitat. The project also included the design and construction of a "grade control ford" to allow tractor and UTV crossing of Strait Creek to the west side of the property for invasive species control and other property management purposes. The Strait Creek Stream and Wetland Restoration project is the first in-lieu fee mitigation program project in Ohio to be permitted and constructed.

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BARTLEY PRESERVE WETLAND AND PRAIRIE LANDSCAPE RESTORATION

Circleville, Ohio

Client:
Appalachia Ohio Alliance

Key Services Provided:
- Hydrology Study
- Wetland Restoration
- Invasive Species Treatment
- Prairie Planting
- Tree Planting

Project Duration:
2017 - 2018

Total Project Cost:
$340,000

Contact:
Steve Fleegal
(334) 399-2345
sfleegal@comcast.net

Key Staff:
Julie Bingham
Neal Hess
Nate Knowles
Brendan Morgan
Gavin Switzer

Pothole wetlands before restoration on the Bartley Preserve.

EnviroScience, Inc. teamed with Ohio Prairie Nursery (OPN) on an exciting opportunity to design and implement the Bartley Preserve Pothole Wetland and Prairie Restoration project on approximately 116 acres of property owned by the Appalachia Ohio Alliance (AOA) in Circleville, Ohio. EnviroScience designed this project to recreate and restore the site to its original Pickaway Plains ecology, one of Ohio's rarest habitats. The Pickaway Plains ecology was typified by upland prairie and oak savannahs interspersed with pothole wetlands.

Pothole wetlands are a relic of the glacial age in Ohio, and today most have been eliminated or heavily degraded by agricultural, industrial, or residential development activities. The Bartley Preserve provides an unparalleled opportunity to revive this habitat type on a significant scale, as it contains two pothole wetland areas estimated between 10 to 15 acres in size. EnviroScience completed a hydrology study that will be the basis for the wetland restoration to improve wetland hydrology. Plant records indicate that these wetland systems can sustain a habitat of rare and endangered herbaceous plants when hydrated.

A three-pronged prairie restoration was also implemented. OPN developed seed mixtures specific to the existing site conditions and desired ecosystem outcomes and long-term viability. EnviroScience also performed extensive invasive species treatments throughout the site, including within the sensitive pothole wetlands and removing woody vegetation within the pothole wetlands.

After restoration, the Bartley Preserve will serve as a living laboratory, where botanists can study the native seed bank and plant regeneration within the rehydrated pothole wetlands, and where biologists can study the birds and insects that will use the restored prairie. Already the site is attracting a plethora of grassland bird and butterfly species. In addition, the restored Bartley Preserve will act as a biological museum where rare plants that are found to exist in the site's pothole wetlands, such as Engelmann's spikerush, Hall's bulrush, and Rocky Mountain bulrush, will have the opportunity to grow and flourish.

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EnviroScienceInc.com

CUYAHOGA FALLS DAM REMOVALS AND RESTORATION

Cuyahoga Falls, Ohio

Client
City of Cuyahoga Falls

Key Services Provided
- Design/Build Services
- Civil Engineering
- Structural Engineering
- Hydraulic Engineering
- Public Outreach
- Site Grading
- Surveying
- Stormwater Pollution Prevention

Contact
Ms. Valerie Wax Carr
2310 2nd St.
Cuyahoga Falls, OH 44221
(330) 971-8240

Project Duration
August 2012 – December 2013

Total Design Fee
$150,000

Construction Cost
$820,000

Total Project Cost
$970,000

Key Staff

EnviroScience
Julie Bingham
Jeff Niehaus

GPD Group
Matt Lascola

RiverReach Construction
Shannon Carneal
Greg Guello

EnviroScience, Inc. and the RiverWorks team completed the design-build removal of two historic low-head dams on the Cuyahoga River in Cuyahoga Falls, Ohio. This $1M project was part of an Ohio EPA initiative to remove abandoned dam structures and restore free-flowing river conditions along the Cuyahoga River from Lake Rockwell to Lake Erie. The project involved removing the two 100-year old dams while stabilizing the adjacent remnant powerhouse structures. Stabilizing the powerhouse structures was a critical component of the project, as one structure supports a restaurant and the other an observation deck. The team was tasked with evaluating the changes in hydraulic forces from removing the dam and dam pool and designing a system to maintain the powerhouses' structural stability.

The physical removal of the dam structures also posed unknown challenges associated with exposing the riverbed within the eliminated dam pool's limits. Because the design concepts for structure and bank stabilization were subject to modification during construction, the project was a true design-build effort by the team. Project tasks included hydraulic river modeling, remnant structure stability analysis, structure and bank stabilization design, and riverbank restoration techniques. This project is historically significant, as it restored the historic fish community while uncovering the cascading bedrock river valley that has been impounded for over 100 years.

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STREAM AND WETLAND RESTORATION
THE SHELLY COMPANY – SHELLY MATERIALS
SHALERSVILLE OPERATIONS

Shalersville, Ohio

EnviroScience, Inc. provided design/build services to The Shelly Company to mitigate for stream and wetland impacts from aggregate mining activities. EnviroScience entered this project after a previous attempt to perform mitigation by others was unsuccessful. Through agency negotiation and developing a new mitigation plan, EnviroScience put the client back on track for compliance with the agencies.

The design was constrained to a portion of the site between the mining pit and a steep slope. A considerable amount of earthwork was needed to prepare the site for restoration and was performed to maximize potential floodplain and create a foundation for long-term stability within narrow time constraints. A total of 5,554 ft. of stream was constructed, and 8.1 acres of wetland (floodplain/riverine, permanently inundated and emergent) was restored or created onsite. The constructed wetlands were planted with over 300 trees (ranging from three-gallon pots to four-inch caliper sizes), over 1,800 herbaceous plugs, and over 4,000 live stakes. Since the downstream reach of Harper Ditch is classified as Exceptional Warmwater Habitat by the Ohio EPA, an extensive amount of habitat was incorporated into the stream channel and adjacent wetlands. Additionally, the stream channel was stabilized with numerous low-profile grade control and bank revetment structures by reusing woody materials recovered onsite. This resourceful approach was also necessary due to the sandy, unconsolidated nature of the subgrade substrate. The project continues to perform very well, meeting the criteria outlined in the site mitigation plan.

Client
Shelly Materials

Key Services Provided
- Mitigation Plan Development
- Hydraulic Modeling
- Stream Restoration
- Wetland Restoration
- Invasive Species Management

Contact
Mr. Neill Hissa
3943 Beck Rd
Mantua, OH 44255
(330) 274-0802
neill.hissa@oldcastlematerials.com

Project Duration
February 2014 – July 2015

Total Project Cost
$950,000

Total Design Cost
$97,000

Total Construction Cost
$853,000

Key Staff

EnviroScience, Inc.
Julie Bingham
Jeff Niehaus

RiverReach Construction
Shannon Carneal
Greg Guello

GPD Group
Matt Lascola
Jesse Rufener

EnviroScience
www.EnviroScienceInc.com

BLACK SWAMP WETLAND RESTORATION
FORREST WOODS PRESERVE

Crane Township, Paulding County, Ohio

Pictured: During construction

Client
Black Swamp Conservancy

Key Services Provided
Design-Build Wetland and Stream Restoration

Contact
Mr. Christopher Collier
Conservation Manager
Black Swamp Conservancy
P.O. Box 332
Perrysburg, OH 43552-0332
419-833-1025
ccollier@blackswamp.org

Project Duration
Sept 2016-present

Construction Mgmt Fee
Design-build

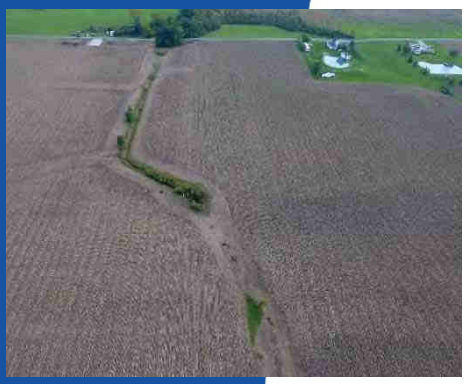
Total Project Cost
$730,000

Key Staff

EnviroScience- Prime
Julie Bingham
Neal Hess
Michael Liptak
Tim Walters

GPD Group

RiverReach Construction



Pictured: Preconstruction

In the fall of 2016, EnviroScience, Inc. and RiverReach Construction completed the design-build restoration of two former agricultural properties in Paulding County, Ohio. The sites were heavily altered by clearing, ditching, and field tile installation given their past agricultural land use. The project included over 40 acres of wetland restoration and 3,500 linear feet of stream within the historic extent of the Great Black Swamp (which once occupied approximately 1,500 square miles of northwest Ohio before being drained and converted mainly to agricultural production). This project will greatly improve the site's hydrology through natural stream and floodplain restoration activities, and by interrupting the drain tiles. The site will be heavily vegetated with native wetland and upland seed mixes and plants. Several vernal pools will also be constructed that will provide important amphibian breeding habitat.

The project is located within the Maumee River watershed, which is the primary contributor to Western Lake Erie Basin dissolved nutrient pollution. As an additional project component, EnviroScience designed the riffles within the restored stream to increase denitrification in order to help decrease dissolved nutrient pollution within this stream. A team of researchers at Kent State University are conducting pre- and post-construction monitoring to determine the project's level of nutrient removal success and to inform future restoration designs.

EnviroScience staff helped to raise the grant funding for this project, which was provided by the Sustain Our Great Lakes program, Ohio EPA's Surface Water Improvement Fund (SWIF), and through a grant from the Ohio EPA's Section 319 program.

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WILLOW CREEK SUB-BASIN RESTORATION AND PRESERVATION PROJECT

Client
Lorain County General Health District

ES Project No. 6407

Key Services Provided
- GIS Analysis of Watershed Resources
- Public Involvement
- Restoration Potential Assessment
- Restoration Plan Development

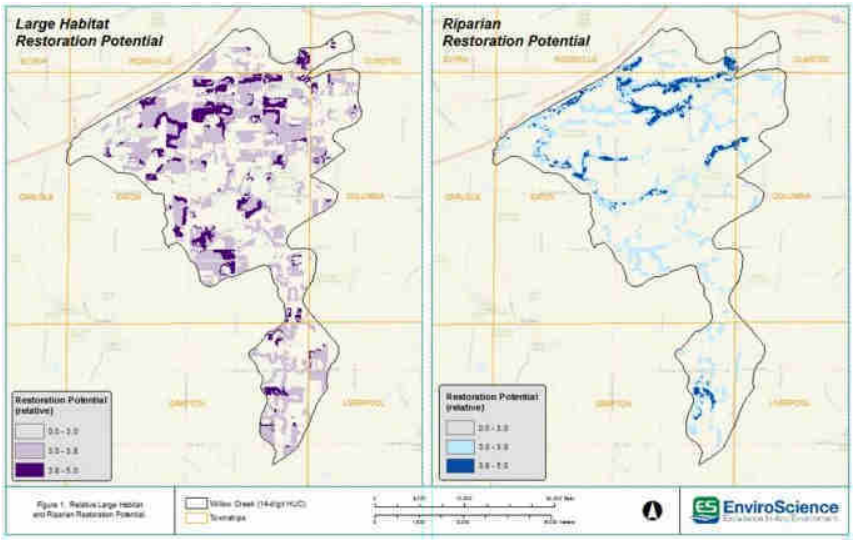
Contact
Jill Lis

Project Duration
2014-2015

ES Project Cost
$60,000

Total Project Cost
$60,000

ES Key Staff
Paul Anderson
Julie Bingham
Dr. Michael Liptak
Danielle Papineau
Dr. Tim Walters



EnviroScience, Inc. completed an analysis of the restoration potential within the Willow Creek subwatershed of the Black River for the Lorain County General Health District. The Black River Remedial Action Plan funded this project to improve water quality in the Willow Creek watershed, a 23-square mile watershed located in Eaton Township and portions of four other communities. The project identified locations within the Willow Creek watershed that may be eligible for future grant funding to conduct wetland, stream, or floodplain restoration. The project also developed specific restoration or preservation plans for these areas and a budget for conducting the work. A 2012 survey conducted by the Ohio EPA found that the creek is polluted and does not meet state water quality standards. In addition, county and local officials have noted water quality and flooding problems in the watershed, caused mainly by excessive stormwater runoff and erosion as well as poorly treated sewage entering the creek.

The project was conducted in four stages: GIS analysis, public involvement, restoration site evaluation, and restoration plan preparation. At each step of the project, EnviroScience coordinated with the Black River RAP, local officials, and concerned citizens to guide our progress. The first phase of the project used GIS-based modeling and the review of local data to identify problem areas potentially most in need of restoration. The second phase of the project was the public involvement phase, which included meetings with the technical advisory committee and a public shareholder meeting to receive input from local landowners and community officials to identify potential sites for more in-depth study. Once this information was processed and landowner permission was obtained, EnviroScience biologists and restoration experts visited 16 sites to collect the detailed information needed to develop the restoration plans. Of the 16 sites visited, three were chosen for the development of detailed restoration or preservation plans suitable for inclusion in grant applications. Restoration plans will be developed for two additional sites under a separate contract with the landowners. A final report was generated that includes all of the data collected for use by all stakeholders and watershed communities. A final public meeting was held in May 2015 to present the final report and project plans.

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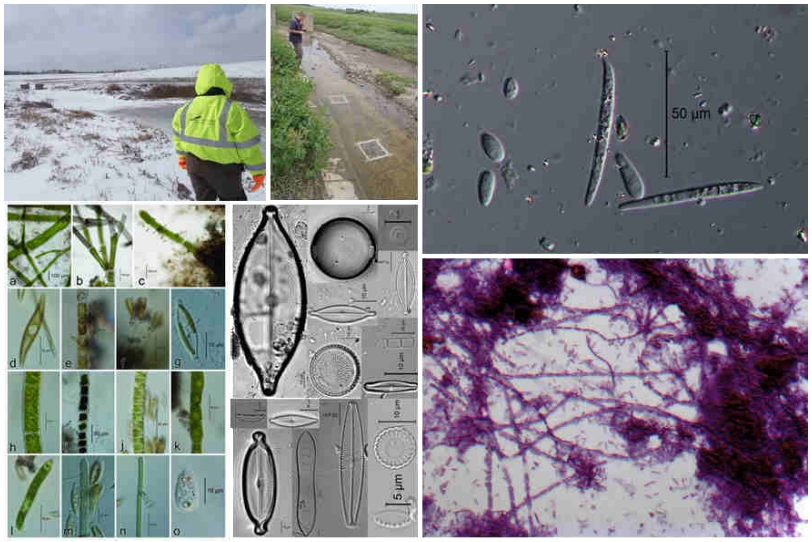
CLEVELAND AIRPORT BIOFILM ASSESSMENT

Cleveland, OH



Client
Cleveland Hopkins International Airport

Key Services Provided
- Project Design
- Field Sampling
- Periphyton Analysis
- Bacteria Analysis
- Fungal Screening
- ATP Analysis
- Photomicroscopy
- Data Analysis
- Data Validation

Contact
Beau Williams
(216) 265-6009

Project Duration
2014-present

ES Project Cost
$269,910.00+

ES Key Staff
Marty Hilovsky
Paul Anderson
Dr. Yakuta Bhagat
Alex Valigosky
Melissa Vaccarino
Bradley Bartelme

EnviroScience, Inc. assembled a team of consultants and laboratories to develop and implement a comprehensive phased approach to determine conditions that support excessive biofilm growth at Cleveland Hopkins International Airport. Overall, EnviroScience assessed a multitude of biological, chemical, and water quality variables to properly assess the dynamic of biofilm communities throughout the airport and its surrounding drainage into Abram Creek, a small tributary to the Rocky River. The project scope included the monthly collection of biological samples coinciding with weekly NPDES sampling, allowing correlation of results. In addition, novel artificial sampling devices were constructed to piece apart further the microhabitat variability. The large amount of data presented unique challenges for EnviroScience, who responded by developing a proprietary sample and data management Access database. This database functioned to store both water chemistry and biological data in an organized manner, and it allowed the retrieval of data in digestible datasets, enabling data-driven management decisions. To date, the database contains over 27,000 rows of sample data for this project alone. However, it is in use for other projects due to the flexibility and data oversight it provides.

EnviroScience key services relevant to this procurement included:

- Project design
- Field sampling
- Periphyton analysis
- Data validation
- Organization and analysis of large datasets

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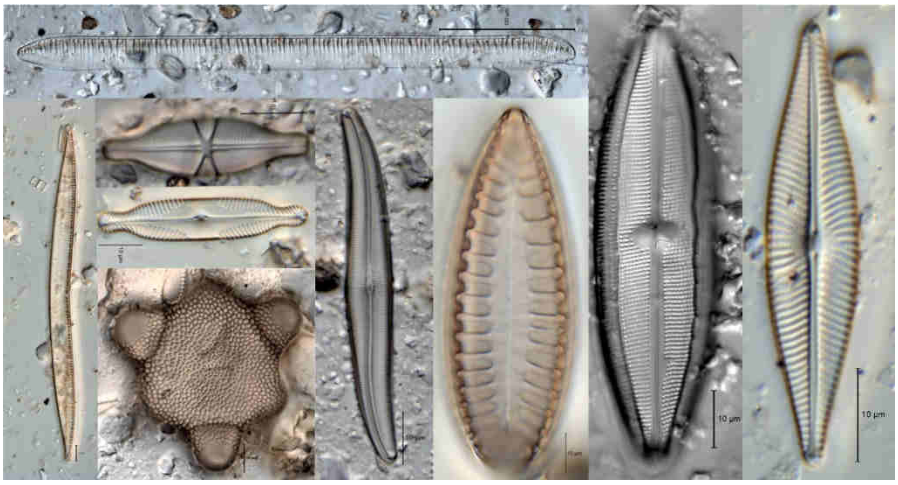
PERIPHYTON AND MACROINVERTEBRATE ANALYSIS

Mississippi, USA



EnviroScience, Inc. provided sorting, identification, and analysis of benthic macroinvertebrate and periphyton samples collected from several streams located in Mississippi's southeastern bioregion. EnviroScience effectively completed the analyses in an expedited period of 20 days for the periphyton samples and 45 days for the macroinvertebrate samples.

Macroinvertebrate biologists processed biological samples following protocols within USEPA's Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers, Chapter 7: Benthic Macroinvertebrate Protocols (EPA 841-B-99-002). Benthic macroinvertebrates from kick samples were sorted and identified to the lowest practical level of taxonomic resolution (in most cases, genus/species).

EnviroScience biologists identified 59 macroinvertebrate taxa, including *Dubiraphia*, *Polypedilum*, *Argia*, and *Tanypus*. Samples were analyzed using the Mississippi Benthic Index of Stream Quality (M-BIQ).

Phycologists processed samples following protocols within USEPA's Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers, Chapter 6: Periphyton Protocols (EPA 841-B-99-002). Algae from composite samples were subsampled for analysis of soft algae and diatoms, and all algal taxa were identified to the lowest practical taxonomic level. In total, 48 algal genera were identified, including *Pseudostaurosiropsis*, *Navicula*, *Amphora*, *Achnanthidium*, and *Leptolyngbya*. All taxa were identified to genus, and most individuals were identified to species level. Species abundance was expressed in terms of relative abundance. Following the completion of laboratory analyses, EnviroScience provided all macroinvertebrate and periphyton data in spreadsheet format.

Client
Michael Pisani & Associates

Key Services Provided
- Benthic Macroinvertebrate Taxonomy
- Periphyton Identification and Enumeration

Contact
Helen Connelly

Project Duration
December 2015

ES Project Cost
$7,800.00

ES Key Staff
Brad Bartelme
Melissa Vaccarino
Rhonda Mendel
Nicole Jordan

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DOMINION PIPELINE INFRASTRUCTURE REPLACEMENT PROGRAM

Northeast, Southern, and Western, Ohio

Client: Dominion Energy Ohio

Contact: Brad Will
(216) 570-7899

Key Services Provided:

- Weekly and Storm Event Inspection
- Daily Construction Oversight
- Contractor Training
- SWPPP Documentation and Reporting
- Sediment and Erosion Control Planning

Project Duration:
2008-Present

Total Project Cost:
Hourly MSA

Key Staff:
Jim Sargiovanni
Israel Merkle
Josh Grund
Amy Dorow

Furnace Run During and After Pipeline Construction

EnviroScience, Inc. has provided environmental inspection services to Dominion Energy Ohio at pipeline construction sites, including projects in Dominion's Pipeline Infrastructure Replacement (PIR) Program since 2008. This program aims to replace nearly 4,000 miles of steel pipeline in urban and rural settings, including projects in Wayne National Forest, Cuyahoga Valley National Park, and the Metroparks in Cleveland and Summit County.

Projects typically contain a site-specific SWPPP, which focuses on sediment and erosion control and details the BMPs necessary to complete the project in compliance with the NPDES and other federal, state, and local agency requirements. We provide weekly inspections and daily on-site guidance of construction personnel throughout all construction phases, including work in streams, wetlands, and other sensitive areas. We have overseen the construction and restoration of streams adhering to the strict guidelines set forth by the MetroParks Serving Summit County and Wayne National Forest.

EnviroScience assists Dominion by ensuring BMPs detailed in the SWPPP are installed in the field, providing erosion and sediment control training to Dominion staff, and coordinating with Dominion project managers through weekly compliance and progress reports. Additionally, EnviroScience attends pre-construction meetings and assists in coordinating the Project Permit Compliance Rollout; performs field marking of streams, wetlands, and other environmentally sensitive areas in a manner that communicates the features to Dominion field personnel/contractors; responds to inadvertent return events and any other spill event to propose appropriate containment and cleanup measures and assists Dominion with immediate field data collection necessary for required reporting; consults with construction personnel in planning hydrostatic test discharges to assist in developing site-specific plans that ensure discharge set-ups, methods, flow rates, and locations are implemented as required by the applicable Hydrostatic Test Water Permits; and performs sampling for hydrostatic test water discharges, coal tar wrapped pipe, and internal PCB wipe sampling.

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TIMKENSTEEL MASTER SERVICE AGREEMENT KEY SERVICES

Ohio, North Carolina, and Texas

Client
TimkenSteel

Key Services Provided
- NPDES Permits
- Submissions to Regulatory Agencies
- Wetland Delineation
- Stormwater Outfall Permits
- Stormwater System Design

Contact
Robert Teter
TimkenSteel
1835 Dueber Avenue SW
Canton, Ohio 44730
(330) 471-3396
Robert.Teter@TimkenSteel.com

Project Duration
2015 - present

ES Project Cost
$5,000.00 - $63,000.00

ES Key Staff
Sheila Rayman, P.E.
Dominic Nardis
John Kwolek, P.E. (retired)

EnviroScience, Inc. provides technical services to TimkenSteel under a Master Services Agreement to assist with Multi-Sector General Permits and Individual Permits compliance; development of NPDES Permit documents for submissions to regulatory agencies; technical assistance on environmental and regulatory concerns regarding stream impacts and wastewater issues; as well as wetland and stream delineation surveys to assist in project implementation. Many of these services are extended to TimkenSteel facilities in North Carolina and Texas in addition to the Canton facilities. EnviroScience is also part of a project team to provide a wide range of environmental consulting services to TimkenSteel, depending on the situation at any given time.

TimkenSteel is a manufacturer of the cleanest high-quality alloy steel and steel products in the world. As part of their operations, stormwater runoff occurs from roads, laydown yards, and scrap storage yards. The discharge of stormwater from the site is regulated by the Multi-Sector General Permit No. 3GR00394 under Section F: Primary Metals. The permit includes benchmark values for aluminum and zinc. To characterize all stormwater outfalls from their sites and document any stormwater sources from offsite, TimkenSteel partnered with EnviroScience to survey Hurford Run, confirm all permitted stormwater outfalls from the TimkenSteel facilities, and document the location and appearance of all other outfalls identified during the stream survey. Any discharges at the time of the survey were visually inspected and recorded. Sediment in Hurford Run was also visually evaluated for possible future sampling and analysis.

TimkenSteel facilities throughout the United States are regulated by NPDES Permits and use EnviroScience nationwide for compliance assistance and regulatory support. Services include reviewing analytical data, drafting NPDES Permit applications, interpreting regulations and regulatory documents, designing stormwater control systems, and drafting correspondence to regulating authorities. EnviroScience staff have over 100 years of combined experience in the steel manufacturing and regulatory business, and they bring this level of knowledge to bear on every TimkenSteel project.

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Client
Palmer Engineering

ES Project No. 8488

Key Services Provided
- NBIS Underwater Bridge Inspections
- Sector Scan Sonar
- Underwater Imaging
- Bathymetric Surveys

Contact
Confidential

Project Duration
2016

ES Project Cost
$135,144

ES Key Staff
Nick Shoots
Rachael Goliver
Ryan Schwegman

45 UNDERWATER BRIDGE INSPECTIONS FOR TENNESSEE DEPARTMENT OF TRANSPORTATION

Locations Across Tennessee

Duck River, Marshall County, Tennessee

EnviroScience, Inc. (under its subdivision ES-Divers) performed underwater bridge inspections on 45 structures for the Tennessee Department of Transportation (TDOT) as a subconsultant to Palmer Engineering. Inspections were completed to Federal Highway Administration (FHWA), Occupational Safety and Health Administration (OSHA), US Coast Guard (USCG), and TDOT regulations. ES-Divers was responsible for providing all necessary dive equipment and personnel to complete the underwater inspections. Water conditions consisted of zero visibility, swift current, and heavy debris.

ES-Divers developed site-specific dive plans and operations methods to maintain safety, communication, and efficiency for the inspection team. ES-Divers' in-house, full-time staff performed the work with state-of-the-art surface-supplied-air (SSA) equipment, diving vessels, sounding equipment, and Sector Scan Sonar hardware and software to capture detailed underwater images. Our surface supplied air diving operations enabled the diver to be in constant communication with the surface support team throughout the entire inspection. Daily dive logs, hazard analysis, and safety briefing reviews were conducted before every dive. Our diving inspection teams are continually updated and trained in the changing environments and approaches related to the underwater inspection services offered.

Upon completion, all field notes and applicable sketches were verified against previously noted conditions. A report including notes, sketches, sounding data, pictures, and recommendations was compiled for each of the inspected bridges. Underwater acoustic images of the substructure and surrounding streambed were acquired for bridges with water depths that exceeded 33 feet. Detailed scaled mosaiced images were developed as a work product for bridge profiles using images gathered in the field using the sector scan sonar coupled with HD photographs.

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WATER AND SEDIMENT SAMPLING
BP OIL SPILL

Gulf of Mexico

Near Shore Water Sampling

EnviroScience, Inc. was an emergency responder to the BP Oil Spill in the Gulf of Mexico in April of 2010. EnviroScience was the primary contractor responsible for the planning and implementing all water and sediment sampling, quality assurance, and quality control for the Mobile, AL sector of the response, which included sampling from the Mississippi/Louisiana border east to Panama City, Florida. This sampling included collecting water quality parameters, surface water and sediment samples for analytical analysis, onshore tarball sampling, and specialized strike sampling teams for oil plume investigation. The sampling took place in various areas (onshore, nearshore, estuary, and offshore).

EnviroScience played a vital role in developing Standard Operating Procedures (SOPs) and QA/QC processes for all sampling in the initial response. Our role also included training CTEH personnel and other BP subcontractors on all aspects of proper sampling techniques, decontamination procedures, instrument calibration/use, data recording, and QA/QC as per active SOPs. EnviroScience personnel managed multiple water and sediment teams as well as participated in the actual sampling. EnviroScience maintained these roles throughout the project and developed a field auditing process to ensure quality data. All aspects of sampling were audited on a two-week auditing cycle, and additional audits were performed as new field staff was added or personnel was reassigned.

Client
CTEH

Key Services Provided
- Sampling Plan
- Water Sampling
- Sediment Sampling
- QA/QC Plan
- Auditing

Contact
Lynn Mcleod
781-952-5381
mcleod@battelle.org

John E. Ross
Gelnn Millner
501-801-8500

Project Duration
April – October 2010

ES Project Cost
$1,000,000.00

ES Key Staff
Jamie Krejsa
Dave Czayka
Krista Tomasello
Tim Willaman
Tim Ator

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ASBESTOS SURVEYS AT TWO BRIDGE STRUCTURES

Jackson and Monroe Townships, Richland County, Ohio

Client
Richland County Engineer,
Adam Gove, P.E., P.S.

Key Services Provided
- Asbestos Inspection, Sampling, Analysis, and Reporting

Contact
Chad Coward, P.E.
County Bridge Engineer
77 N. Mulberry Street
Mansfield, Ohio 44902
419-774-7505

Project Duration
November 2019

Project Cost
$2,000

Key Staff
Chuck Kessler, AICP, CEP, CAHES
Amy Wakefield, CAHES

Prior to the demolition or renovation of a structure, an asbestos inspection is required to be performed in accordance with OAC 3745-20 by a state of Ohio certified asbestos hazard evaluation specialist as per OAC 3701-34-02(c). EnviroScience provided pre-demolition asbestos surveys of two bridge structures along rural township roads in Richland County: JAC-CR61-3.57 and MON-TR336-2.21 in 2019.

The surveys were performed following the ODOT Asbestos Inspection for Bridges Guidance, dated April 1, 2018. The surveys consisted of a review of bridge structure construction plans as available, an inspection of accessible portions of the bridges, sample collection and lab analysis, and reporting and partial completion of the Ohio EPA Notification of Demolition and Renovation forms. Specifically, the bridge evaluations included a visual inspection of the deck, beams, abutments, guardrails, and inspection of any utilities associated with the bridges.

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Client
Confidential

ES Project No. 13120

Key Services Provided
- Emergency Response
- Fate and Transport Analysis
- Remediation
- Monitoring Well Installation
- Environmental Sampling
- Agency Coordination

Project Duration
2020-Ongoing

Project Cost
>$100,000

Key Staff
Kyle Lawrence
Amy Wakefield
Reiss Warren
Chrisie Brown, P.E.
Broc Brenner

SPECIALTY CHEMICAL RESPONSE, REMEDIATION, AND MONITORING

West Virginia

EnviroScience, Inc. responded to a specialty chemical release from a tanker in West Virginia. As a result of the release, the product migrated to a tributary of the Ohio River. Immediate actions included containing the spill with boom and neutralization of the tributary bank with ammonia to counteract the acidic product. A pump-around was initiated to divert upstream water around the spill location and dewater it. Once the area was dewatered, the spilled material was excavated, characterized, and hauled to a disposal facility.

During the cleanup efforts, EnviroScience personnel performed surface water sampling on the creek, Ohio River, drinking water supply wells, and Ohio River drinking water intakes in the nearby towns. Sampling was initiated to assess the onsite cleanup and recovery operations' effectiveness and delineate and quantify the concentrations of spill-related analytes upstream and downstream of the release.

EnviroScience experts evaluated the chemistry of the spilled material early on to determine the material's potential fate in the environment. This evaluation was used to help determine sampling locations, analytical procedures, and remediation strategies. It was determined that the material quickly reacted to form an inert, insoluble substance with limited migration potential.

After the initial cleanup, the area was restored to its pre-incident state. EnviroScience developed a long-term monitoring plan, approved by the West Virginia Department of Environmental Protection, that included surface water and groundwater monitoring for two years. The continuation of sampling will be determined based on the yearly sample results. EnviroSciecne geologists oversaw the installation of groundwater monitoring wells and performed the required sampling. To date, no post-remediation detections of spill-related analytes have been observed in the designated sampling locations.

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MCKINLEY CREEK REGIONAL STORMWATER IMPROVEMENTS

Painesville Township, Lake County, Ohio

Client
Lake County Stormwater Management Department

Key Services Provided
- Stormwater Management Design
- Green Infrastructure
- Stream Restoration
- Reforestation and Vegetative Restoration

Contact
James Gills, P.E., P.S.
(440) 350-2770

Project Duration
2018-present

ES Project Cost
Phase I
$40,595

ES Key Staff
Sheila Rayman, P.E.
Angelina Hotz, P.E.
Amy Wakefield

The Lake County Stormwater Management Department and Painesville Township have expressed concerns regarding increased flows in a tributary to McKinley Creek noticed during periods of heavy rainfall. The McKinley Creek Tributary is located west of Bacon Road and north of SR-2, in the northeastern portion of Painesville Township, and flows north, converges with McKinley Creek and discharges to Lake Erie. The tributary McKinley Creek and passes through a 42" culvert under the Norfolk and Southern Combined Railroad and through an existing subdivision.

The proposed improvements will transform an approximate 15-acre stormwater easement area into a regional stormwater facility by providing water quality and quantity control for the contributing watershed to the unnamed tributary of McKinley Creek. This multifunctional improvement uses green infrastructure methods to reduce the volume of runoff through infiltration; provides a means to improve water quality and nutrient reduction by increasing the tree canopy with site-wide native plantings and vegetated buffer areas; repurposes the irrigation ponds as stormwater quantity control basins; and uses the stream bank restoration of McKinley Creek Tributary to provide additional flood storage and water removal via wetland plantings.

Through 2019, EnviroScience is in the preliminary design phase of this project. Ultimately, the proposed facilities will bring relief to the residents of Lake County and Painesville Township. The overall project design allows for long-term runoff removal and reduction of non-point source pollutants that have historically discharged to McKinley Creek.

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ECOLOGICAL ASSESSMENTS OF TRAIN DERAILMENT SITES

Alabama, Kentucky, New York, Ohio, Washington, D.C.

Macroinvertebrate Survey Near Oneida, NY

EnviroScience, Inc. completed environmental monitoring, remediation, and natural resource consulting on over 15 train derailment sites for CSX Transportation from 2006 through 2015. Assessment areas include sites near Paris, Slaughters, Bowling Green, and Brooks, Kentucky; Shelby and Castleberry, AL; Oneida, New York; Painesville and Kent, Ohio; and Washington, D.C. The objective of these studies was to assess potential impacts on biological communities due to train derailments.

EnviroScience used pulsed direct current electrofishing wading methods to collect fish to assess the relative status of existing fish communities. EnviroScience evaluated the habitats using the U.S. Environmental Protection Agency's Rapid Bioassessment Protocols and the Qualitative Habitat Evaluation Index. Field chemistry was performed following established American Public Health Association protocols. EnviroScience also performed qualitative macroinvertebrate collections and evaluated representative community health using standardized indices.

EnviroScience evaluated terrestrial and wetland habitats at the Oneida and Painesville sites. Initial assessments involved evaluating the area to determine zones of possible impacts. Biologists walked the property, noting vegetative communities, natural resources, and possible effects on wildlife, vegetative, wetland, and aquatic communities. Surface waters were visually examined for direct impacts.

Client
CSX Transportation, Inc.

Key Services Provided
- Fish Survey
- Macroinvertebrate Survey
- Wetland Evaluation
- Water Quality Sampling
- Commercial Diving Services
- Endangered Mussel Survey
- Permitting and Restoration design
- Sediment Sampling
- Habitat Mapping
- Terrestrial Survey
- Construction Impact Inspection

Contact
Paul Kurzanski
paul_kurzanski@csx.com
(904) 359-3101

Project Durations
2006 – Present

ES Key Personnel
Jamie Krejsa
Dave Czayka
Greg Zimmerman
Joe Papinaeu
Max Koran
Krista Tomasello
Tim Ator
Tim Willaman
Ryan Schwegman
Kevin Reed

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Client
American Electric Power

ES Project No. 7726

Key Services Provided
- Pilot Study
- Fish Tissue Sampling
- Water Quality Monitoring

Contact
Jon Magalaski

Project Duration
2016-2019

ES Project Cost
$67,000

ES Key Staff
Dave Czayka
Kevin Reed
Andrew Zimmerman

CONESVILLE FISH TISSUE COMPLIANCE STUDY

Conesville, Ohio

Kevin Reed of EnviroScience holds a Walleye collected during sampling.

American Electric Power (AEP) retained the services of EnviroScience, Inc. to provide a demonstration of compliance on their Conesville, Ohio Plant's National Pollutant Discharge Elimination System (NPDES) Permit. Ohio Administrative Code (OAC) 3745-33-05(A)(3)(b) states that if a permittee's mercury discharge exceeds 0.012 µg/L on a 30-day average criterion, the permittee can perform a compliance demonstration. This demonstration would show that the concentration of methylmercury (CH_3Hg) in the edible portion of consumed species exposed to the discharge, or the weighted average of various species based upon local consumption, does not exceed 0.3 mg/kg.

In 2015, EnviroScience performed a pilot study to investigate the potential for using edible fish tissue methyl mercury concentrations as a means of demonstrating compliance. The pilot study findings indicated the concentration of methylmercury was below the 0.3 mg/kg threshold, demonstrating compliance with the NPDES permit. Following the success of the pilot study, EnviroScience formulated a study plan to officially demonstrate compliance to the Ohio Environmental Protection Agency (OEPA). The OEPA approved the study plan, requiring sampling every three years. EnviroScience completed surveys in 2016 and 2019, demonstrating the facility continues to meet the requirements of their NPDES permit.

This study is unique as it was the first of its kind to demonstrate compliance for facilities whose mercury discharge exceeded 0.012 µg/L on a 30-day average. Due to the demonstration of compliance, the facility has continued to operate without incurring costs that would be required to lower mercury in the discharge.

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Client
Dover Light & Power

ES Project No. 11144

Key Services Provided
- 316(b) Report

Contact
Dave Filippi

Project Duration
2018

ES Project Cost
$41,000

ES Key Staff
Chrisie Brown
John Kwolek, P.E.
Dave Czayka
Andrew Zimmerman

DOVER LIGHT & POWER 316(B) REPORT

Dover, Ohio

The CWIS structure at the Dover Plant.

EnviroScience, Inc. formulated a 316(b) Report to address requirements of the United States Environmental Protection Agency's (USEPA) Clean Water Act (CWA) Section 316(b) in association with Light & Power (Dover) Plant. The Dover Plant meets conditions under Section 316(b) of the CWA that require the facility to perform a Section 316(b) analysis. These conditions include existing facilities that use cooling water intake structures (CWIS) to withdraw from "waters of the United States" at a design intake flow of more than two million gallons per day and that use at least 25 percent of the water they withdraw exclusively for cooling purposes. The CWIS water rule is regulated under the National Pollutant Discharge Elimination System (NPDES) permit. The purpose of this report is to present information from 316(b) related studies for Dover Plant. Section 316(b) of the USEPA's CWA sets forth requirements to regulate the potential for adverse impact on the environment and well-being of aquatic life from facilities. Section 40 of the Code of Federal Regulations (CFR) part 122.21(r) requires these studies.

The 316(b) Report included all information required by the regulations, including a source water physical characterization, a CWIS configuration narrative, a description of the source water baseline biological characterization, a cooling water system operation narrative, and a narrative of the operational status of the processing unit.

This 316(b) Report demonstrates EnviroScience's blend of engineering and biological expertise to meet our clients' needs. Where other firms may have the engineering knowledge necessary, EnviroScience can pair the same expertise with extensive biological experience. Additionally, our partnership with Amendola Engineering demonstrates EnviroScience's ability to coordinate with other firms to complete a common goal.

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AIR EMISSIONS INVENTORY REPORT

Lippman and Wooster Campuses, Ohio

Client
GOJO Industries, Inc.

ES Project No. 12089

Key Services Provided
- Air Emissions Inventory

Contact
Ms. Sunshine Scherer
Environmental Manager
GOJO Industries, Inc.
Lippman Campus
3783 State Road
Cuyahoga Falls, Ohio
44223-2689

Project Duration
2019

ES Project Cost
$14,000

ES Key Staff
Chrisie Brown, P.E.

GOJO Industries, Inc. requested EnviroScience, Inc. to prepare an air emissions inventory (AEI), including actual emissions and potential to emit (PTE), for the GOJO Lippman Campus Manufacturing Center located in Cuyahoga Falls, Ohio, and the GOJO Wooster campus located in Wooster, Ohio. The AEI is used to assess compliance with the Ohio Environmental Protection Agency's (EPA) Permit to Install and Operate (PTIO) requirements codified in Ohio Administrative Code (OAC) 3745-31-02 and to determine the applicability of the Title V Operating Permit requirements identified in OAC 3745-7.

Using onsite visits to complete source inventory and USEPA AP-42 established methodologies to calculate air emissions for each emission source, EnviroScience concluded that no current or planned air emission sources required an air permit per OAC 3745-3745-31-02 on the Lippman and Wooster Campuses. The facilities are also "presumed to have inherent physical limitations" as the actual emissions were below 20 percent of any major regulated pollutant threshold. Therefore, the facilities were not required to obtain a Title V Operating Permit per OAC 3745-77.

Since performing the AEI, EnviroScience has provided continuous support to the facility by evaluating proposed process expansions to determine the potential changes to the Title V status and PTIO requirements. EnviroScience prepared and submitted a PTIO application for a new process and created an emissions tracking spreadsheet to track emissions, as required by the permit.

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RESUMES OF KEY STAFF



JAMES R. KREJSA

President / Chief Executive Officer

Jamie Krejsa is President and Chief Executive Officer of EnviroScience, Inc. From his early years with the company and in his role as Director of Ecological Services, Jamie has been central to the growth of EnviroScience as it exists today. He has worked to make EnviroScience into a renowned company with a national reputation as an environmental solution provider. In his 20 plus years of experience, Jamie has grown the business by educating industry on how it can be profitable to do the right thing when faced with environmental challenges and opportunities. In drawing off his expertise as a biologist and an educator, Jamie has developed training protocols, which created a staff of more than one hundred scientists and professionals who have learned to perfect the science and the business of a hands-on approach in any environment. Jamie has overseen the management and the execution of over 8,000 site evaluations nationally, reinforcing his expertise in all varieties of biological evaluations. Jamie's dedication and focus on quality science has earned himself and EnviroScience tremendous agency respect, a benefit to every client he and EnviroScience serve.

EDUCATION

B.S. Biology, specializing in Aquatic Ecology, The University of Akron, 1991

CERTIFICATIONS

MSHA Certification

Certified PADI Driver

Ohio Primary Headwater Habitat Evaluation-Ohio EPA Training

Collection Permits in the States of OH, PA, NY, WV, MI, IL, KY, VA, FL, & AL

40h HAZWOPPER / E-Rail Safe

FRA Trainer

YEARS OF EXPERIENCE

EnviroScience, Inc.: 24

Hiram College Instructor: 1

RELEVANT EXPERIENCE

The National Aquatic Resource Surveys-EPA

Deep Water Horizon MC 252 Oil Spill in the Gulf of Mexico

Ethanol Release, Rock River, IL

Various Ecological Evaluations for CSX Transportation

"Zooplankton Population Dynamics in Crystal Lake"

SELECTED PROJECT EXPERIENCE

The National Aquatic Resource Surveys, 2012 - 2017. Jamie is the project manager for a five-year contract with awards to date of up to $10 million with the U.S. Environmental Protection Agency (USEPA) for the National Aquatic Survey (NARS) program. The NARS program provides statistical surveys by working with state, tribal and other federal agency partners of over 1,500 randomly selected lakes, rivers, streams, coastal waterways and wetlands around the country. Each year the NARS program focuses on different water body types and tasks. Jamie will ensure that the proper monitoring designs, indicators, and methods allow the USEPA to combine the information from all over the country to effectively answer questions regarding the quality of the nation's waters. Jamie oversees the training and implementation of his teams as they monitor and assess the condition of surface waters across the U.S. over a five-year period by designing tests, gathering field samples, measuring lab results and reporting data.

Deep Water Horizon MC 252 Oil Spill in the Gulf of Mexico, 2010 - 2011. Perhaps the greatest test of Jamie's project management skills was the 2010 Deep Water Horizon MC 252 Oil Spill in the Gulf of Mexico. This project required the management of both personnel and costs for a large field team and numerous consultants and outside contractors. Jamie managed the ES Field Team that consisted of approximately 15 biologists working 21-day shifts throughout the emergency response phase of the incident (April-October). Additionally, Jamie had a management role in the deployment and auditing of consultants working in the States of Florida, Alabama, Mississippi, and Louisiana.

GREG ZIMMERMAN

Vice President / Project Manager / Endangered Mussel & Fisheries Biologist (Fed. Permit # TE130900-7, Ohio 16-47)

As Vice President at EnviroScience, Mr. Greg Zimmerman oversees transportation projects and manages the operations of the company, including endangered mussel, bat and fish consultations, and large, multi-task environmental projects. Greg has 25 years of experience in project management for natural resources and freshwater mussel and endangered species consulting. The USFWS has approved Greg as a mussel and fish contractor in various regions since 1997, including OH. He has also designed and managed some of the largest bio-monitoring and mitigation projects completed to date in North America for PennDOT and WVDOH as well as ODOT's Western Management Unit Full-Delivery Bat Mitigation Project (Agr. 516-18), 530-20 IRT-Cat3 wetland mitigation credits (in process) and WOO-LUC-75-30.700.00. He has completed 22 Biological Assessments (BA) for transportation-related projects where endangered species were an issue, and he has assisted many other clients with projects where T&E impacts were anticipated.

EDUCATION

M.L.S. Biology and GIS, Kent State University, 2004

B.A. Environmental Biology, Hiram College, 1996

CERTIFICATIONS

Approved G1 – 4 Ohio Mussels

Association of Diving Contractors International, Commercial Air Diver

ODOT Ecological Training and PDP Training

Advanced Diving Openwater / Drysuit / Search and Recovery Certifications

40h HAZWOPER / eRailSafe

CPR / AED / First Aid / Oxygen Administration

YEARS OF EXPERIENCE

EnviroScience, Inc.: 22
Hiram College: 2

RELEVANT EXPERIENCE

DOT Project Management

Programmatic Agreements

Natural/Cultural Resources

Endangered Species

Biological Assessments

GIS of Biological Systems and Water Quality Data

SELECTED PROJECT EXPERIENCE

ODOT VAR-STW Ecological Resources Surveys (PID 95904) Statewide, OH: Project Manager for this statewide agreement focused on threatened and endangered species; primarily mussel and bat-related project conflicts throughout Ohio. Greg worked closely with the ODOT OES to maintain scheduled progress on all elements of the work. The 11 Task Orders included technical, dynamic, time-sensitive projects such as SCI-823-0.00 Portsmouth Bypass BA, LAK-535-0.39 Grand River Bridge, and HEN-109-18.02 over the Maumee River. During the scoping for each task, Greg worked closely with OES and the relevant agencies and, for example, in the case of HEN-109-18.02, reduced the scope from the ODNR protocol by 40% while meeting the needs of the agency. These projects have been successfully completed, and the contract was closed out in 2016.

ODOT SCI-823-0.00 (PID 19415) Portsmouth Bypass BA, OH / KY: Project Manager and co-author of this Biological Assessment (BA) under the ODOT VAR-STW contract to present the effects of this large bypass project to the USFWS for endangered bats. Work included a review of wetland and stream features throughout the proposed corridor. Greg coordinated closely with ODOT and the consultant team to ensure the project deadlines were met and the document complied with the guidelines of the Endangered Species Act (ESA). The BA was reviewed by USFWS with minimal comments, and a Biological Opinion was issued by USFWS, authorizing the project

MARTIN HILOVSKY

Chairman / Environmental Scientist

As a founder and Chairman of EnviroScience, Inc., Marty Hilovsky is responsible for new business development and development/ revision of the company's laboratory and quality assurance protocols. In response to client needs, he provides technical direction of the company's capabilities in several market areas, including performing Toxicity Reduction Evaluations (TRE), federal contracting, and lake management. The use of the TRE process, coupled with Marty's extensive experience in wastewater treatment and design, allows EnviroScience to provide its clients with a cost-effective means to identify the source(s) of toxicity in their wastewater discharge.

Over the past ten years, Marty has concentrated on developing business with the federal government and in the lake diagnostic and lake management fields. Among his accomplishments is EnviroScience's award of a five-year contract with task order awards to date of more than $20 million with USEPA to manage the National Aquatic Resource Survey (NARS) program. Under this contract, Marty serves as a senior technical advisor and deputy PM on several multimillion-dollar task orders.

Marty has advised lake management clients in Ohio, Michigan, and Indiana on watershed assessment strategies and techniques. He has developed and implemented complex watershed monitoring programs and used the resultant data to devise nutrient control strategies and in-lake solutions to problems caused by excess nutrient inputs. Marty has served on the board of directors of the Ohio Lake Management Society for more than a decade, and he is currently an elected Supervisor with Summit Soil and Water Conservation District, where he routinely applies his broad water quality background to the numerous challenges faced by urban watersheds. He has received advanced training in stormwater permitting and stormwater management, including attending several training courses held by the Northeast Ohio Stormwater Training Council and the Center for Watershed Protection in Charlottesville, VA.

Marty also manages and conducts various lake management services for EnviroScience, including diagnostic evaluations, watershed studies, aquatic macrophyte surveys and management plans, feasibility studies, fishery management plans, depth profile mapping, and lake rehabilitation plans. His particular area of interest is the control and management of invasive aquatic species.

EDUCATION

M.S. Aquatic Ecology, Kent State University, 1981

B.S. Biology, Kent State University, 1977

YEARS OF EXPERIENCE

EnviroScience, Inc.: 31

Other work as Env. Scientist:: 13

PROFESSIONAL AFFILIATIONS

Member Cuyahoga River AOC Technical Committee 2019

Supervisor, Summit Soil & Water Conservation District 2013-2020

Ohio Lake Management Society Treasurer and Board of Directors 2010-2020

RELEVANT EXPERIENCE

Securing and technical oversight of a five year contract with EPA to manage the National Aquatic Resource Survey Program

N.P.D.E.S. permitting and compliance

Reviews of facility operations, wastewater treatment systems, and identification of possible sources of toxicity in final discharges at a wide variety of industrial and municipal WWTPs

Implementing state & federal water pollution control programs

Inspections of facilities and their pollution control equipment ranging from petroleum refineries to steel mills to nuclear power plants

RUTLEDGE CLEMENT RIDDLE, PWS

Professional Wetland Science | Founder/President of ClearWater Environmental Consultants, Inc., An EnviroScience Company

Clement Riddle founded ClearWater Environmental Consultants, Inc. in 2002. He has over 30 years of experience with wetland permitting, environmental planning, and natural resource studies in North Carolina. He oversees all environmental projects and serves as the Principal for large and technical permitting projects. Ongoing representative projects include mitigation design and monitoring, 404 permitting for golf courses, master-planned communities, retail shopping malls, industrial developments, and Environmental Assessments for NEPA/SEPA compliance. Clement has extensive experience managing wetland/stream permitting and mitigation projects. He has dealt extensively with the U.S. Army Corps of Engineers, Wilmington District, and the North Carolina Department of Environment and Natural Resources.

Prior to founding ClearWater, Clement opened and managed the Hendersonville office for Newkirk Environmental, Inc. from 1998–2002. In 1998, he obtained his Master of Planning Degree from the University of Virginia with a concentration in Environmental Planning and Land Development. While pursuing this degree, he continued to conduct environmental assessments and wetland planning for clients in Alabama, Georgia, North Carolina, South Carolina, and Oklahoma. Prior to graduate school, he was employed by Law Engineering and Environmental Services for four years, where he was involved with wetland delineations, protected species assessments, and environmental permitting.

EDUCATION

Master of Planning, University of Virginia, 1998

Bachelor of Science, Natural Resources, University of the South, 1991

CERTIFICATIONS

Certified Professional Wetland Scientist, 2001
Society of Wetland Scientists
The National Association of Environmental Professionals

YEARS OF EXPERIENCE

EnviroScience, Inc.: <1
ClearWater Environmental: 20
Newkirk Environmental, Inc.: 4
Law Engineering and Environmental Services: 4

RELEVANT EXPERIENCE

Mitigation Design and Monitoring
404 Permitting
Master Planned Communities
Retail and Industrial Developments
NEPA/SEPA Compliance
Wetland/Stream Permitting and Mitigation
Wetland Planning

SELECTED PROJECT EXPERIENCE

Charah – Duke Energy Coal Ash Landfills

Asheville Airport

Duke Energy

Pratt & Whitney

High Hampton Redevelopment

Nucor Steel Plate Mill

Clement has over 30 years of experience with wetland permitting, environmental planning, and natural resource studies in North Carolina

CERTIFICATIONS

Certified Professional Wetland Scientist, 2001

RELEVANT EXPERIENCE (CONT'D):

Environmental Assessments

Wetland Delineation

Protected Species Assessments

Environmental Permitting

Water Quality Sampling and Monitoring

Progress Energy

Tryon International Equestrian Center

Balsam Mountain Preserve

Sibelco Mine

Norfolk Southern Intermodal Facility

Biltmore Estate

Wal-Mart Asheville

Mountaintop Lake and Golf Club

Clearwater Paper Mill

Sierra Nevada

Raw Water Intake 15MGD French Broad river

Cherokee Casino

Charlotte International Airport 3rd Parallel Runway

Biltmore Lake

Biltmore Technology Center and Town Square

N.C. Arboretum

Bright's Creek Golf Club

The Chattooga Club

JULIE BINGHAM, CERP

Manager of Restoration Services / Restoration Biologist

Ms. Julie Bingham is the Restoration Practice Area Manager at EnviroScience, where she uses her 21 years of experience to manage a multidisciplinary team of staff, develop, manage, and oversee work over the Midwest, South, and East Coast Operations. She is also regularly involved with education and instructional lectures regarding restoration and morphology for Igniting Learning Streams (10 years) and Cleveland Metroparks volunteer learning initiatives. Her background in biology, morphological assessment, restoration, design, and implementation experience makes her a unique leader.

Julie has completed Rosgen Applied Fluvial Morphology through Level IV and is certified by OEPA as a Level 3 Qualified Data Collector for fish sampling and QHEI. She is intimately involved with each stage of restoration projects, including the actual construction implementation, where her experience in heavy equipment operation and oversight makes the restoration design a reality. Julie's ability to apply Clean Water Act goals and biocriteria data to restoration projects allows her to analyze existing conditions and develop predictive habitat and biological performance criteria for restoration designs.

EDUCATION

M.S. Biology, University of Akron, 2015

B.A. Biology, Hiram College, 1998 (Graduated Cum Laude)

CERTIFICATIONS

Certified Ecological Restoration Practitioner (CERP)

Rosgen Applied Fluvial Geomorphology Levels I, II, III & IV

OEPA Qualified Data Collector QHEI Level 3

OEPA Qualified Data Collector Fish Evaluation Level 3

Ohio EPA's Primary Headwater Habitat Assessment (PHWH)

Ohio EPA's ORAM Version 5.0

YEARS OF EXPERIENCE

EnviroScience, Inc.: 19

ISLS Instructor: 10

Oxbow River & Stream Restoration: 2

RELEVANT EXPERIENCE

Dam Removal / Restoration

Stream Restoration / Relocation

Stream Bank/Slope Stabilization

Riparian Enhancement / Stabilization

Morphological Assessment

Erosion Monitoring & Assessment

Hydraulic Modeling

SELECTED PROJECT EXPERIENCE

Mill Creek Stream and Wetland Restoration, Highland Hills, OH 2016. Restoration of approximately ~4,100 lf of urbanized headwater stream through active golf course. New channel, floodplain, and riverine wetland construction. Also, partial dam removal and stream restoration on an in-line pond.

Cuyahoga Falls Dam Removal 2014, Cuyahoga Falls OH, 2014
Removal of two dams on the Cuyahoga River. Managed the restoration design and approach to removal and performed construction oversight and permitting for the project.

Mudbrook Stream Restoration at Former Dam Site, Stow, OH, 2016. Restoration of 2,100 lf using a raise grade approach. Dam removal, wetland restoration and sanitary infrastructure modification.

Stream and Wetland Mitigation Shalersville Construction & Mitigation, Shalersville, OH, 2015. Mitigation of approximately 5,500 lf of stream and 8.8 acres of on-site wetland mitigation for a gravel mining operation on a potential cold water habitat stream.

NEAL HESS

Environmental Scientist

Neal Hess has over 18 years of environmental and conservation experience and is a part of the EnviroScience Restoration Team. Neal specializes in identifying, developing, financing, and managing conservation and restoration projects. Since 2006, Neal has obtained over $85 million in grant and other financing for the acquisition and restoration of conservation land, as well as for park and trail development. Neal has managed a wide variety of restoration projects, including stream and wetland restoration, reforestation, invasive species management projects, and prairie restoration. In addition to grant funding, he is also well versed and experienced in all manners of compensatory mitigation, including wetland, stream, and endangered species mitigation projects. Neal also has a real estate broker license and uses it solely to purchase property for park, nature preserve, and conservation areas.

EDUCATION

B.S. Geology, Ohio University, 1998

M.S. Geology (Coursework Only), Ohio University, 2000

CERTIFICATIONS

Ohio Licensed Real Estate Agent

Ohio EPA Ohio Rapid Assessment Method Training

NCTC Conservation Banking Class

Yale Conservation Finance Boot Camp

YEARS OF EXPERIENCE

EnviroScience, Inc.: 4.5

Conservation/Restoration Experience: 18

ACHIEVEMENTS & AWARDS

Grant Funding Acquired: $85 million

Conservation Land Acquisition Transactions Completed: 70+

Acres Protected: 3,500+

Recipient Appalachia Ohio Alliance Conservation Achievement Award 2015

Recipient Appalachia Ohio Alliance Conservation Partner Award 2019

SELECTED PROJECT EXPERIENCE

ODOT Western Management Unit Bat Mitigation, Western Ohio, 2017 – 2019. Neal led this award-winning, full delivery effort to secure 600 acres of verified endangered bat species habitat within ODOT's Western Management Unit for species mitigation purposes. The $5 million project involved habitat assessments, real estate, reforestation, prairie planting, and invasive species management.

ODOT IRT Approved Category 3 Wetland Mitigation Credits, 2020 – Present. Neal is leading EnviroScience's efforts to develop a wetland mitigation bank in Ohio's Walhonding and Lower Maumee River watersheds to deliver a minimum of 15 acres of Category 3 wetland mitigation, including forested wetland mitigation.

Lowellville Dam Removal, Lowellville, Ohio, 2018 – Present. Neal played a critical role in getting the funding approved for the first major dam removal project on the Mahoning River. He is overseeing EnviroScience's role in the sediment characterization, permitting, stream restoration design, and construction oversight for the project.

Struthers Dam Removal, Struthers, Ohio, 2018 – Present. Neal is managing EnviroScience's sediment characterization, stream restoration design, permitting, and construction oversight efforts on this second important Mahoning River Dam removal effort.

EDUCATION

Mount Union College, Bachelors of Science in Biology, 2004

CERTIFICATIONS

Ohio Rapid Assessment Method (ORAM) presented by the Ohio EPA

Section 7 Endangered species consultation presented by the U.S. Fish and Wildlife Service

Amphibian and Vegetative Index of Biotic Integrity (AmphIBI and VIBI) presented by the Ohio EPA

Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) presented by the Ohio EPA

YEARS OF EXPERIENCE

EnviroScience, Inc.: 9

Flickinger Wetland Services: 6.5

RELEVANT EXPERIENCE

Wetland Delineation on a variety of habitats throughout Ohio

Wetland Mitigation / Restoration

Stream and Wetland Evaluations

Listed Species (including Indiana and northern long-eared bat) Habitat Assessments

GPS and AutoCAD Mapping

Individual and Nationwide Permit

Individual Water Quality Certification

Levels 1, 2, and 3 Isolated Permits

OPSB document submittals

LAURA SAYRE

Natural Resource Practice Area Manager / Wetland Biologist

Laura has been with EnviroScience (ES) since 2011 and been working as a wetland biologist since 2005. Laura manages the Natural Resources practice area at EnviroScience where she coordinates schedules, projects, equipment needs, budgeting, and approximately $2M in revenue for wetland delineation, permitting, wetland/stream assessment, T&E species survey, and fish survey projects. As part of this role, Laura also acts as the technical lead for all agency coordination, including Nationwide Permitting (NWP) through the U.S. Army Corps of Engineers (USACE). Laura reviews all projects with a potential need for NWP and reviews subsequent Pre-Construction Notifications for submittal to various USACE districts. Laura manages a variety of ecological projects with specific expertise in corridor projects and residential and commercial developments. At ES, her main project management responsibility is a large contract that requires ecological assessment and agency coordination for up to 100 projects per year. Laura performs wetland assessments and delineations, as well as ecological assessments and habitat surveys. She prepares ecological reports including those for 404 Nationwide (NWP) and Individual Permits, 401 Water Quality Certifications (WQC), and Ohio Level 1, 2, and 3 isolated permits. Additionally, Laura prepares coordination documents to be submitted to the ODNR and USFWS. Laura's involvement with corridor projects also involves the preparation of Stormwater Pollution Prevention Plans, Notice of Intent submittals, and Ohio Power Siting Board (OPSB) Construction Notices and Letters of Notifications. Laura has managed several projects that have resulted in onsite mitigation plans, implementation of the plan, and monitoring of mitigation. She has been trained in delineation, ORAM, QHEI, HHEI, VIBI, AmpIBI, Section 7 Consultation, the Midwest Regional Supplement to the USACE Delineation Manual, and Stream Stabilization and Design. She is also experienced in AutoCAD mapping.

SELECTED PROJECT EXPERIENCE

Dominion Energy Ohio, Contract Manager / Project Manager, Non-Optimain Projects, Various locations, OH, 2012 - Present. This master service agreement (MSA) provides a large volume of various sized linear projects that require varying levels of ecological survey and coordination. Project types include pipeline replacements, installations, and hydrotesting, and station expansions and installations. Under the MSA, Laura is responsible for all environmental coordination required prior to pipeline or station construction. Typical environmental coordination includes wetland delineation, endangered species consultation, NWP application, stormwater pollution plan preparation, notice of intent preparation, Ohio Historic Preservation Office (OHPO) desktop review, and city/county coordination for stormwater review. Laura also prepares Individual 401/404 permit applications and OPSB submittals as necessary.

EMMALISA KENNEDY

Project Manager / Wetland Ecologist

Ms. Emmalisa Kennedy has been with EnviroScience since 2010 and has eleven years of professional experience. She manages a variety of ecological projects, including utility line surveys and assists in vegetation assessments, wetland mitigation and restoration projects, and is experienced in invasive species control in wetlands through herbicide spraying. Emmalisa conducts wetland assessments and delineations, stream habitat evaluations, and Indiana bat habitat assessments. She is certified in USACE Wetland Delineation, Vegetative Index of Biotic Integrity, AmphIBI, ORAM, and HHEI evaluation techniques. She prepares ecological reports, including those for 404 Nationwide Permits, 401 WQC documents, and Level 1 Ohio Department of Transportation ecological surveys and utility assessments in accordance with USACE and the State of Ohio regulations. Her experience also includes NEPA compliance and Master Planning for the Department of the Army at Fort Detrick, MD, and the National Cancer Institute in Maryland. Additionally, she has completed baseline surveys in support of NEPA compliance for water and wastewater related to laboratory operations.

EDUCATION

M.S. Aquatic Ecology, Kent State University, 2008

B.A. Environmental Studies, Hiram College 2003

CERTIFICATIONS

40h OSHA HAZWOPER Training Course

38h Army Corps of Engineers Wetland Delineation Training Program

CSX Contractor Safety & Roadway Worker Protection

Headwater Habitat Evaluation Index

Ohio Rapid Assessment Method

Wetland Biocriteria Training: Sampling and Data Analysis for Floral and AmphIBI

Professional Wetland Scientist

YEARS OF EXPERIENCE

EnviroScience, Inc.: 10

RELEVANT EXPERIENCE

Utility Line Surveys

Vegetation Assessments

Wetland Mitigation / Restoration

Stream Habitat Evaluations

Bat Habitat Assessments

PROJECT EXPERIENCE

Dominion Resources, Gas Pipeline, Wetlands Delineation and Assessment, various locations, Ohio, 2010-present. Project manager of a high volume of wetland delineation projects for the replacement of existing gas pipelines in various locations throughout Ohio. Conducted fieldwork to delineate and assess wetland boundaries, functional assessment, and determination of adjacency to other "Waters of the U.S." She assisted in preparing letter reports, delineation reports, Stormwater Pollution Prevention Plan documents, USFWS, ODNR, and State Historic Preservation Office documents, NWP 404, and 401 WQC documents for Dominion Resources.

FirstEnergy Corporation 2013-present. Emmalisa was the project manager of a 150-acre wetland delineation, individual 401 WQC, and individual 404 permit project in Perry, Ohio, to fulfill a Nuclear Regulatory Commission requirement following the Fukushima-Daiichi event. She conducted the wetland delineation and prepared permits for the project. In addition, the agencies involved required numerous alternatives analysis and mitigation options for this project. She assisted in the investigation of these options to determine the least impactful project design and optimal mitigation plan. The required 10-year monitoring project is currently in progress and includes surveys for Vegetative Index of Biotic Integrity and stream assessment.

MICHAEL A. LIPTAK, PH.D.

Senior Ecologist

Dr. Liptak has been a member of the ecological survey team since 2004, specializing in wetlands ecology, wetland restoration, and mitigation wetland design. Dr. Liptak earned his Ph.D. at Ohio State University under the noted wetland ecologist Dr. William Mitsch and completed his graduate research on the created wetlands at the Olentangy River Wetland Research Park in Columbus. He has over 20 years of experience in wetlands research and consulting and is a Certified Senior Ecologist (Ecological Society of America). His primary responsibilities at EnviroScience, Inc. include rare plant surveys, wetland restoration planning, wetland assessments and delineations, ODOT technical report preparation, and permitting.

Dr. Liptak has extensive experience with terrestrial, aquatic, and wetland surveys for transportation projects of all sizes. He is ODOT-prequalified for Ecological Surveys, Waterway Permits, Stream & Wetland Mitigation, and Noise Analysis & Abatement Design. He has been the primary author on many ODOT Ecological Survey Reports. Dr. Liptak has experience in preparing mitigation plans for many different projects, including wetland creation, restoration, and enhancement, as well as preparing upland restoration and prairie planting plans. Dr. Liptak is a member of the Society of Wetlands Scientists and the Ecological Society of America, and regularly gives seminars on wetland issues and regulations within the state of Ohio.

EDUCATION

Ph.D., Environmental Science Graduate Program, The Ohio State University, 2000

B.S. Biology, The University of Toledo, 1995

CERTIFICATIONS

US Army Corps of Engineers Wetland Delineator Certification Training

Health and Safety for Hazardous Waste Operations Course CFR 1910.120 (HAZWOPER)

8h HAZWOPER Refresher Course

Biocriteria and QHEI

Identification of Grasses, Rushes and Sedges

Forested Wetland Restoration Course, Wetlands Training Institute

Planning Hydrology for Constructed Wetlands Course

Fundamentals of Traffic Noise Short Course

FHWA Traffic Noise Model 1.0b and 1.1 course

PENNDOT Publication No. 24 – Project Level Highway Traffic Noise Handbook Training

FHWA Fundamentals and Abatement of Highway Traffic Noise

Certified Senior Ecologist (Ecological Society of America)

SELECTED ODOT PROJECT EXPERIENCE

Seiberling Way Phase I and II. Summit County, Ohio. 2010-2012. Ecological project manager for Phases I and II of the Seiberling Way project in Akron. Dr. Liptak completed two Level 1 ESRs, waterway permitting (NWP 14 for Phase I), PRT identification (Phases I and II), directed seasonal clearing of PMRTs (Phase II), and directed stream mitigation design and mitigation construction oversight efforts (Phase II).

MRG-60-13.31 (PID 110131) – 404 Individual Permit/401 Water Quality Certification. Morgan County, Ohio. 2020. The senior technical reviewer on complex permitting submittal for bank stabilization to fill a scour hole in the Muskingum River that compromised the stability of SR60.

CUY-480 Fairview Park Noise – Traffic Noise Analysis and Abatement Design. 2020. Dr. Liptak completed traffic noise analysis for a Type II project along I-480 in Fairview Park. Collected field data, created noise model including barrier scenarios, and wrote the technical report.

Teal Richards-Dimitrie, M.S.

Project Manager | Herpetologist | Wildlife Ecologist | GIS Analyst

Teal Richards-Dimitrie is a herpetologist and ecologist working on a wide range of wildlife and natural resource projects. In addition to her survey and monitoring work in the state of Ohio [reptile and amphibian inventory / coordination including Spotted Turtle, Blanding's Turtle, Hellbender, and Eastern Massasauga], she has worked in many regions of the US surveying state and federally listed taxa. Teal has over 14 years of reptile and amphibian field survey experience, including T&E species surveys, visual encounter surveys, capture-mark-recapture techniques, radio telemetry, habitat identification and measurement, acoustic monitoring surveys, phlebotomy, and environmental-DNA collection. She is also a wetland delineator, permitting specialist, and has assisted with freshwater mussel (Recon. Approved) and numerous other mitigation and environmental commitment monitoring projects.

EDUCATION

M.S. Biological Sciences, Towson University, 2011
Thesis: Habitat use, diet, and conservation of Northern Map Turtles in Maryland

B.S. General Biology, Chemistry minor, Grand Canyon University, 2006

CERTIFICATIONS

- **Ohio DNR Division of Wildlife, Approved Herpetologist**
- **Ohio DNR Division of Wildlife, Approved Mussel Recon. Surveyor**
- Cleveland Museum of Natural History, Docent Certification
- Mid-Atlantic Center for Herpetology and Conservation, Bog Turtle Sub-permittee
- Project Learning Tree, Wet, Wild Certification

YEARS OF EXPERIENCE

- EnviroScience, Inc.: 4
- HSU Sponsored Programs Foundation: 3
- Green Diamond Resource Company: 2
- College of the Redwoods: 0.5
- Massachusetts Division of Fisheries and Wildlife: 0.5
- Towson University: 3
- USFWS, Blackwater NWR: 0.5
- Straughan Environmental: 0.5
- Illinois Natural History Survey: 0.5
- Jungle Bay EcoResort: 0.75

SELECTED PROJECT EXPERIENCE

Ohio Threatened and Endangered Habitat Herpetofaunal Surveys, Exclusion Surveys, Presence Surveys, GIS services, and Agency coordination, The East Ohio Gas Company, Various Locations, OH, 2016 to present. This master service agreement a large volume of various-sized linear projects that require varying levels of ecological survey and coordination. Project types include pipeline replacements, installations, hydrotesting, and station expansions and installations. As part of this MSA, Teal is responsible for all herpetological coordination when required prior to pipeline or station construction and all required monitoring. She also assists with GIS mapping for all ecological projects under the MSA.

Spotted Turtle Habitat Assessment, Presence Survey, and Agency Coordination. ODOT TRU-Culverts FY2020 Replacement Project, Trumbull County, Ohio. 2019-2020. Teal confirmed Spotted Turtle Habitat Suitability for the Ohio state-listed turtle species to potentially be impacted by culvert replacement activities. Though one of the sites provided high-quality suitable habitat, the presence survey using ODNR-approved visual and trapping techniques did not detect the species and project activities commenced as planned and on schedule.

Eastern Massasauga Rattlesnake Dredging Monitoring and Agency Coordination, Sentinel Road Ditch, Ashtabula County Engineers, 2018. Teal was on-call and provided pre-work clearing surveys and dredging monitoring for a project area previously determined to be a suitable Massasauga habitat by another ODNR DOW approved herpetologist.

RYAN SCHWEGMAN

Marine Services Manager / Malacologist
(Federal Permit #TE130900-7, Ohio 1649)

As Manager of Marine Services, Mr. Ryan Schwegman oversees EnviroScience, Inc.'s underwater projects, primarily focusing on ESA endangered mussel consultations and underwater inspection, construction, and engineering projects. His project management experience includes over 75 projects ranging from large corridor projects to commercial diving jobs. Ryan is an approved USFWS mussel contractor and has completed mussel surveys in 11 states throughout the U.S. Ryan has worked extensively with over 80 species of freshwater mussels, including ten federally-listed and numerous state-listed species.

Additionally, he has completed or assisted in the completion of seven Biological Assessments for transportation and private industry projects. He is a member of the Freshwater Mussel Conservation Society (where he serves as co-chair on the Guidelines and Techniques Committee) and is an active member of the Ohio River Valley Ecosystem Mollusk Subgroup. Ryan has eight years of experience in OSHA and ADCI-compliant surface supplied diving operations. In addition to his scientific training and consulting experience, Ryan is a NOLS certified Wilderness (EMT) and Certified Dive Medic (DEMT). Located in a home office near Eaton, Ohio, Ryan is conveniently located near central and southwestern Ohio.

EDUCATION

B.A. Zoology, Miami University, 2010

CERTIFICATIONS

Approved USFWS / State Mussel Contractor (OH, PA, WV, IN, NY, +12 States)

PADI Open Water Diver

40HR Hazwoper

Ohio Division of Watercraft NASBLA Approved Boating Education Course

10 hour OSHA training

e-RAILSAFE

MSHA 40h hour Course

Nationally Registered EMT

NOLS Wilderness EMT

Diver Medic Technician

YEARS OF EXPERIENCE

EnviroScience, Inc.: 8

Ohio Dept. of Natural Resources: 4

RELEVANT EXPERIENCE

Federally Permitted Malacologist

Endangered Mussels

Hellbender Surveys

Freshwater Mussel Surveys

Mussel Translocation and Monitoring

SELECTED PROJECT EXPERIENCE

ODOT Freshwater Mussel Bridge Surveys, 2013 – Present. EnviroScience has completed over 20 bridge-related freshwater mussel surveys and population studies for ODOT under Ryan's direction since 2013. Projects range from detecting the federally endangered rayed bean with a small crew on Swan Creek to completing massive survey and relocation efforts on the Maumee River (i.e., HEN-109-18.02 PID 90991 & WOO-LUC-75-30.700.00 PID93592, LUC-CSX-RR PID 180349). These surveys were completed for ODNR compliance and funded by ODOT through various contracts.

USFWS Erie National Wildlife Refuge Freshwater Mussel Surveys of Muddy Creek, Pennsylvania, 2015. As the Project Manager and Senior Scientist, Ryan oversaw 17 survey sites in Lake, Dead, and Muddy Creeks. Surveys were conducted to assist the USFWS in a freshwater mussel inventory of the Erie National Wildlife Refuge. Four different federally listed species, as well as many different state listed T&E species, were collected.

SARAH VESELKA

Senior Scientist / Project Manager

Sarah Veselka has over 20 years of experience conducting stream bioassessments and reporting for research laboratories, non-profits, and private industry. Over the past 12 years, she grew a successful West Virginia based environmental consulting company from the ground up, supporting over 40 employees. Her skills include southern and central Appalachian freshwater fish, mussel, crayfish, and aquatic benthic macroinvertebrate sampling and identification. Sarah has most recently focused on freshwater mussel surveys conducting over 200 surveys in the past seven years throughout the Appalachian, Mid-Atlantic, and Midwestern regions for a wide range of clients. She is a PADI certified Master Diver and has significant experience with low visibility, large river diving using a dry suit and full-face mask communications. Sarah is highly organized and has considerable experience in project management, agency consultations, funding procurement, client relations, and scientific writing.

EDUCATION

M.S. Wildlife & Fisheries Resources, West Virginia University, 2004

B.S. Biology, University of Georgia, 2000

CERTIFICATIONS

- USFWS Approved Malacologist (KY, OH, PA, WV, +16 States)
- T&E Coalfields Crayfish Approved Surveyor (KY, VA, WV)
- PADI Master Diver – Drysuit Specialty
- PEC Safeland Basic
- SFS Family Level Taxonomist
- CPR / AED / First Aid / Oxygen Administration

YEARS OF EXPERIENCE

EnviroScience, Inc.: 1

Environmental Consulting: 15

University Labs / Research: 5

Non-profit Watershed Group: 5

RELEVANT EXPERIENCE

Federally Permitted Malacologist

Endangered Mussels

Coalfields T&E Crayfish Surveys

Macroinvertebrate Surveys, Sorting, and Identification

Freshwater Mussel Surveys

Mussel Translocation and Monitoring

Fish Community Assessments

PADI Master Diver

Diving / Scuba / Snorkeling

Habitat Assessments

SELECT PROJECT EXPERIENCE

Substrate Remediation Project(s) Mussel and Fish Surveys, Kanawha River, Charleston, Project Manager / Field Leader, WV, 2018 – Present. Sarah is the Project Manager / Lead Aquatic Ecologist for freshwater mussel and fish surveys for two large-scale contaminated substrate remediation projects on the Kanawha River in Charleston, WV. This has involved client and agency coordination (USACE, USFWS, and WVDNR) including Section 7 Consultation for located T&E freshwater mussel species, safe field work management, and completion using multiple big river fish survey techniques and SCUBA diving equipment, data QA/QC, and report compilation. Mussel salvage and relocation will occur in 2021.

Water Intake Upgrade, Allegheny River, Project Manager / Field Leader, Emlenton PA, 2019 - Present. Sarah authored a Biological Assessment and successfully navigated Section 7 Consultation for Project effects to six federally listed and three state listed freshwater mussel species. She coordinated and led field efforts for the salvage and relocation of over 1,200 mussels including PIT and glitter tagging approximately 360 T&E species. Sarah is overseeing Project construction monitoring and future mussel and habitat monitoring efforts which will take place over the next five years.

West Fork River, WV Dam Removal Project, Project Manager / Field Leader, 2015 - 2016. Sarah led a project in partnership with the USFWS and WVDNR to survey for and relocate freshwater mussels in conjunction with the removal of three low-head dams on the West Fork River in Harrison County, WV. Sarah was responsible for coordination, survey design and implementation, mussel identification, and relocation efforts. Over 1,500 freshwater mussels were relocated through the cooperative efforts of state and federal agencies, private industry, and volunteers.

REBECCA WINTERRINGER

Senior Scientist / Project Manager / Malacologist

Ms. Becca Winterringer has 22 years of experience conducting aquatic faunal inventories across the U.S. and 18 years in the professional consulting industry. Becca is a proactive, hands-on manager who has supported many state departments of transportation, energy, transmission/pipeline corridor, and large river navigation projects. She has extensive experience in aquatic ecology, and she is skilled in natural resource permitting, waterways assessments, GIS, environmental assessments, and aquatic surveys. Becca holds a USFWS Federal Fish and Wildlife recovery permit and several state collection permits for freshwater mussels allowing her to work across the Midwest, Southeast, and Northeastern United States. She is a qualified mussel surveyor statewide in Ohio, Pennsylvania, and West Virginia and has recently completed large-scale surveys in Michigan, West Virginia, and New York. She has been diving since 2000 and holds a Rescue Diver certification. Becca is active on various committees for the Freshwater Mollusk Conservation Society (FMCS) and the Society of Freshwater Science member.

EDUCATION

M.S. Biology, Arkansas State University, 2003

B.S. Fisheries Science, Virginia Tech, 2000

CERTIFICATIONS

Approved USFWS / State Mussel / Fish Contractor in >16 States

OH, PA, and WV Approved Malacologist

PADI – Rescue Diver

ODOT Ecological Resources and Water Permits Prequalification

OSHA – 10hr

40-hr HAZWOPER /

CPR / AED / First Aid / Oxygen Administration

YEARS OF EXPERIENCE

EnviroScience, Inc.: <1

TRC Environmental: 4

URS Corporation: 3

Ecological Specialists, Inc.: 7

CCR Environmental, Inc.: 2

Arkansas State University: 2

USFWS Ohio River Islands NWR: 1

Virginia Tech USFWS Coop. Unit: 2

SELECTED PROJECT EXPERIENCE

Ohio Department of Transportation, Freshwater Mussel Study Bridge Replacement Projects, Freshwater Mussel Surveys, Various Counties throughout Ohio, 2012 – Present Conducted over 80 mussel surveys according to the Ohio Mussel Survey Protocol. Results of the surveys were incorporated into necessary Ohio DOT Environmental Survey Reports required for regulatory review of the proposed bridge and municipal projects. Streams surveyed were located throughout Ohio. Recent ODOT mussel survey and relocation projects include WAS-26-25 (PID 11014), GEA-422-12.26 (PID 102434), CUY-10-8.56 (PID 103161), and CUY-90-7.58 (PID 103161).

Marathon Petroleum Company LP, Mussel Survey for Ceredo Fleet Maintenance Dredging Project, Ohio River mile 315, Wayne County, West Virginia (Group 4 Stream), 2019 – Present. Project Manager for a mussel survey of the Ceredo Fleeting area in the Ohio River near Kenova, West Virginia. Developed and submitted a project-specific survey plan, performed agency coordination, completed survey fieldwork, and submitted an agency and client required report documenting survey results. Over 3,000 feet of shoreline was surveyed to Protocols resulting in over 1,000 mussels, including two federally listed species. Becca assisted Marathon with Section 7 of the ESA consultation on behalf of the client.

SHEILA RAYMAN, P.E.

Manager of Compliance Services/Sr. Environmental Engineer

Ms. Sheila Rayman, P.E., is the manager of EnviroScience, Inc.'s Compliance Services Practice Area where she helps clients reach and maintain compliance with environmental regulation through design and implementation of stormwater management facilities, Stormwater Pollution Prevention Plans, Spill Prevention, Control, and Countermeasure Plans, NPDES Permits and infrastructure plans. Sheila has spent over 25 years as a municipal and consultant engineer, project manager, and compliance and stormwater specialist. She holds professional engineer registrations in six states.

Before coming to EnviroScience, Ms. Rayman was the Assistant City Engineer for the City of Stow. She focused on citywide stormwater improvements and meeting/maintaining compliance with the regulations of the city's Ohio EPA MS4 status. Her responsibilities included stormwater master planning and ensuring that SWPPP and SPCC documents for the city's municipal facilities addressed current regulations. In addition, she assisted in multiple roadway and bridge inspections and condition ratings. Her expertise in residential, commercial, and industrial development and environmental permitting provides experience-based assistance to both private and public sectors. Ms. Rayman's wide range of experience includes environmental studies, compliance with government and safety regulations, design standards, and construction documents and inspections. She maintains a strong focus on stormwater management and incorporating green rather than gray solutions to both new and redeveloped areas.

EDUCATION

B.S. Civil Engineering, University of Akron, 1995

CERTIFICATIONS

Professional Engineer, State of Ohio, P.E. No. [redacted]

Professional Engineer, State of Michigan No. [redacted]

Professional Engineer, State of Tennessee No. [redacted]

Professional Engineer, Commonwealth of Virginia No. [redacted]

Professional Engineer, State of West Virginia No. [redacted]

Professional Engineer, Commonwealth of Pennsylvania [redacted]

FHWA – NHI Safety Inspection of In-service Bridges

YEARS OF EXPERIENCE

EnviroScience, Inc.: 3.5

City of Stow: 3.5

MS Consultants, Inc.: 3.5

GBC Design, Inc.: 10

Cooper & Associates, LLP: 4

RELEVANT EXPERIENCE

Interpreting Stormwater Regulations – EPA NPDES Permits, MS4, and Local Municipality Codes

Developing Stormwater Management Plans

Green Infrastructure

Retention/Detention Facilities

SWPPP Plans

SELECTED PROJECT EXPERIENCE

SPCC Development for Cleveland Hopkins International Airport, City of Cleveland, Ohio, 2019-2020. Project Manager, Sr. Engineer, EnviroScience. To remain compliant with federal regulation, Ms. Rayman preformed the required inspection and documentation necessary update the facilities SPCC Plan in accordance with 40 CFR Part 112, Oil Pollution Prevention. The 1,900 acres International Airport maintains multiple generators, storage of thousands of gallons of fuel in AST's, fuel islands and oil storage drums across the site. Successful completion of this project required working together with the airport EHS managers and organization of multiple regulatory authorities.

SPCC Plan and SWPPP Development for Burke Lakefront Airport, City of Cleveland, Ohio, 2019-2020. Project Manager, Sr. Engineer, EnviroScience. The 450-acres city owned airport bordered by Lake Erie, required both SWPPP and SPCC Plan updates to remain compliant with federal and state pollution prevention guidelines. Ms. Rayman lead the EnviroScience team during the site inspection to identify the locations of regulated bulk storage containers, define potential spill pathways and drainage infrastructure, locate spill response materials, and other pertinent physical features of the Facility. Incorporating both the SWPPP and SPCC updates into one project reduced the number of site visits, map revisions and document updates which resulted in a cost savings to the client.

TIM ATOR

Environmental Scientist / Project Manager

Tim Ator has been with EnviroScience, Inc. since 2010 and currently works as an Environmental Scientist / Project Manager within the Compliance Services group. Tim specializes in environmental sampling and provides EnviroScience with technical leadership for water, soil, and sediment sampling projects. He has extensive experience with various aquatic surveys and biological assessments. Tim also serves as an integral member of EnviroScience's emergency response team, responding to numerous spills and train derailments.

EDUCATION

B.A., Interdisciplinary Studies (Environmental Science, GIS, Geography), The University of Akron, 2009

CERTIFICATIONS

HAZWOPER 40hr., 2009

HAZWOPER 8hr., yearly refresher

FRA / e-RAILSAFE

OSHA 30hr. General Industry, 2015

OSHA 8hr. Stormwater Management During Construction

Ohio Boater Safety Certification

YEARS OF EXPERIENCE

EnviroScience, Inc.: 10

RELEVANT EXPERIENCE

Emergency Response & Assessment

Project Management

Surface Water Sampling

Soil Sampling

Sediment Sampling

Biological Survey & Sampling

Stormwater Sampling

Water Quality Monitoring

Ecological Damage Assessment

Environmental Remediation

Erosion & Sediment Control

Wetland & Stream Restoration

SELECTED PROJECT EXPERIENCE

Northeast Ohio Industrial Steel Manufacturer, Client Manager/Project Manager, 2018 – Present. EnviroScience provides environmental consulting services to an industrial steel manufacturer with multiple facilities in northeast Ohio. As the client manager and project manager, Tim has performed stormwater sampling, benchmark sampling, visual assessments, and routine facility inspections associated with each facility's National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP). In addition, Tim manages multiple investigative stormwater projects that gather analytical data to evaluate the facilities discharges to develop potential corrective action measures and improve best management practices (BMPs).

American Electric Power (AEP), Racine Hydroelectric Project, 2019. EnviroScience, in collaboration with HDR, performs water quality monitoring and recreation study activities associated with the AEP Racine hydroelectric project. Deployment and monitoring of in-situ water quality data sondes in the Ohio River to monitor dissolved oxygen and temperature during the scope of the project. Multi-parameter handheld water quality meters are used to collect relevant profile data. Recreation study consists of monitoring use of a recreational area with deployment of trail cameras and survey forms. EnviroScience collects and manages the data associated with water quality monitoring and recreation study for delivery to client.

Crew Leader for USEPA National Rivers and Streams Assessment (NRSA) 2018. EnviroScience has a contract with USEPA as part of the National Aquatic Resource Survey (NARS). Tim is a crew leader for the USEPA's 2018/2019 NRSA, which is a collaborative survey that provides information on the ecological condition of the nation's rivers and streams and the key stressors that affect them. Tim is performing river and stream assessments throughout New York collecting biological, chemical, physical, and human health data using a variety of sample collection techniques.

CHRISIE BROWN, P.E., BCEE

Senior Environmental Engineer

Chrisie Brown has over 20 years of diverse experience in environmental and chemical engineering. Chrisie has worked across a wide variety of industries, including pulp and paper, wood treating, fiber optics, nuclear waste treatment, and pesticide manufacturing, to solve complex chemical, environmental, and processing problems for clients. Her projects include remediation technology development, regulatory compliance, risk assessments, environmental sampling, site assessments, and environmental litigation support. She has extensive experience in environmental contaminant chemistry, fate and transport, chemical processing, and remediation techniques.

EDUCATION

M.S. Environmental Engineering, Vanderbilt University, in progress

B.S. Chemical Engineering, University of Colorado, 1996

CERTIFICATIONS

Licensed Professional Engineer : TN, OH, WV, VA, AL, KY

Board Certified Environmental Engineer, Hazardous Waste Management and Site Remediation

Level I2 Erosion Prevention and Sediment Control Design Certified Professional (TN)

YEARS OF EXPERIENCE

EnviroScience, Inc.: 2
AquAeTer, Inc.: 14
Lucent Technologies: 1.5
Westinghouse Savannah River Company: 5

RELEVANT EXPERIENCE

- Environmental Remediation
- Phase I/Phase II Site Assessments
- Environmental Sampling in all Media
- Environmental Litigation Support
- SARA Reporting
- Risk Assessments
- Bench/Pilot Scale Testing
- Chemical Process Development
- Chemical Fate and Transport
- Environmental Contaminant Chemistry
- Forensic Chemistry

SELECTED EXPERIENCE

SPCC Plan Development and Training, Clarksville, TN, Technical Lead, 2018 – 2019. Chrisie prepared a Spill Prevention Control and Countermeasures (SPCC) plan for the construction phase of a large data center buildout that included multiple subcontractors and ongoing transfer of generator sets (gensets) to the site owner. Under the plan, subcontractor tanks were consolidated into a central storage area to streamline SPCC controls, and the process for transferring gensets to the site owner were streamlined. Chrisie also prepared and presented the required training for oil handling personnel at the site.

Air Emissions Inventory, Cuyahoga Falls and Wooster, OH, Technical Lead, 2019. Chrisie prepared an air emissions inventory (AEI), including actual and potential to emit (PTE) emissions for the GOJO Lippman Campus Manufacturing Center and the GOJO Wooster campus. The inventory included site visits to complete a source inventory, and the use of USEPA AP-42 established methodologies to calculate air emissions for each emission source. Based on the inventory, it was demonstrated that no current or planned air emission sources required an air permit per Ohio codes and that the facilities were not required to obtain a Title V Operating Permit.

White Paper Preparation, OH, Technical Lead, 2019. At the request of the client, Chrisie prepared a white paper summarizing the scientific and regulatory information about a specific Aqueous Film Forming Foam (AFFF) containing Poly- and Perfluoro Alkyl Substances (PFAS). She conducted a thorough literature review to evaluate the environmental implications of using AFFF, the fate and transport of the chemical components of AFFF, and the current regulations and analytical methods relating to these components. Based on the results of the review, recommendations for the use of the product were made and suggested best management practices were provided to minimize the dispersion of the chemicals into the environment.

JIM SARGIOVANNI II

Project Manager / Environmental Inspector, CESSWI

Jim Sargiovanni is the leader of the Environmental Inspection Group at EnviroScience, where his responsibilities consist of managing projects and professionals for environmental inspections following SWPPP guidelines and proper management of stormwater during construction. Jim is also responsible for reviewing and sending weekly progress and environmental compliance reports to director-level employees and governmental agency personnel. He is a Certified Erosion, Sediment, and Storm Water Inspector (CESSWI) and holds an Inspection and Maintenance Certification for Storm Water Control Measures in Ohio. Jim has performed water quality sampling for monitoring water discharge events during construction while also sampling for waste characterization for project-related debris. Best Management Practices (BMPs) for land conservation are used daily during environmental inspections for the Storm Water Pollution Prevention Plan (SWPPP) inspections. Previous job experience included The Nature Conservancy (TNC) to control and GPS invasive plants. He has extensive experience with multiple methods of invasive control and has expertise in identifying Ohio's local flora in forest, flood plain, and wetland ecosystems. Mr. Sargiovanni is proficient in the use of submeter GPS units to precisely locate project sites, limits, and the streams and wetlands to be protected.

EDUCATION

B.S., Conservation, Kent State University, 2010

CERTIFICATIONS

Certified Erosion, Sediment and Storm Water Inspector (CESSWI)

Inspection and Maintenance Certification for Storm Water Control Measures in Ohio

8 Hr. Stormwater Management during Construction Course (2012)

American Red Cross Adult and Child First Aid/CPR/AED

YEARS OF EXPERIENCE

EnviroScience, Inc.: 7
The Nature Conservancy: 1.5

RELEVANT EXPERIENCE

Storm Water Management

Storm Water Pollution Prevention Plan (SWPPP) Review & Inspections

Erosion & Sediment Control Plans & Inspections

Invasive Species Management

Water Quality Sampling & Discharge Monitoring

Sediment Sampling

Waste Characterization & Sampling

GPS

Stream and Wetland Restoration

SELECTED PROJECT EXPERIENCE

Dominion Energy Ohio – Pipeline Wrap and Wipe Sampling, 2017-Present. Sampling of used pipeline material for waste characterization and identification of pipeline fluids within the system. Materials sampled included wrapped/coated pipe and wiped pipeline fluids that are sent to the lab for Polychlorinated Biphenyls (PCBs) and Asbestos identification. Responsible for organizing sampling plans on projects, organizing and coordinating sampling at active construction projects, and following sampling protocols, Ohio EPA standards, and quality assurance sampling, and report generation/submission to Dominion for record-keeping. Yearly Asbestos training was completed for proper sampling of pipeline materials.

Dominion East Ohio Gas. – Western Access II – 17-mile Transmission Pipeline Lead Environmental Inspector. Cadiz to Dennison, OH, 2015-2017. Lead Environmental Inspector for Dominion East Ohio's 17-mile transmission pipeline installation. Led and organized a team of environmental inspectors to help keep environmental compliance on a large-scale pipeline project in the hills of southern Ohio. Responsibilities included assisting construction personnel with the development and implementation of BMPs in environmentally sensitive areas, attending on and offsite meetings about the project, and documenting and ensuring the work complied with regulations mandated by agencies and landowners.

JENNIFER VYDRA

Manager of Laboratory Services

Jennifer Vydra is a biologist focusing on sales and management for the ecotoxicity laboratory and EnviroScience's ecological division. Jennifer is also a leader of the sales/marketing team. Her strengths include a strong customer focus, sales experience, and scientific discipline. Her 22 years of account management experience has sharpened her work skills in our state-of-the-art Toxicity Testing Laboratory, Aquatic Research Laboratory, and Ecological Division. Jennifer has worked with the Ohio Division of Wildlife on two endangered species projects: the Peregrine Falcon and Osprey reintroduction programs.

Jennifer has been integral to increasing the ecotoxicity laboratory and algal services client base and expanding service capabilities. She serves as the laboratory customer point of contact for sales, support, and general interface. As Laboratory Manager, she is also responsible for the employees, monthly billing, department budgeting, account pricing, test scheduling, and courier logistics. As part of the EnviroScience sales/marketing team, she works with the technical sales team and practice areas to increase business and manage sales opportunities.

EDUCATION

B.S. Biology, Kent State University, 1995

Associates of Applied Science, Biomedical Engineering Technology, Stark State College of Technology, 1998

CERTIFICATIONS

e-RAILSAFE

CSX Roadway Worker Protection

Mine Safety and Health Administration (MSHA) Training

CPR Certification

YEARS OF EXPERIENCE

EnviroScience, Inc.: 8

Keithley Instruments/Tektronix Inc.: 14

ProWrite (Technical Writer): 1

ODNR Division of Wildlife: Seasonal

RELEVANT EXPERIENCE

Account Management
Aquatic Toxicity Sales
Cyanotoxin Sales
Customer Relations

PROFESSIONAL AFFILIATIONS

WEF/OWEA/PWEA
AWWA/OH AWWA
PAAEL
SETAC

SELECTED PROJECT EXPERIENCE

USEPA National Aquatic Resource Survey, Microcystin and Cylindrospermopsin Analysis, 2013 - Present. As part of the NARS project, EnviroScience performs Microcystin and Cylindrospermopsin analysis on fresh and marine water samples from probability-based sampling sites throughout the USA. Thousands of samples are analyzed utilizing the ELISA method following the USEPA laboratory operations manual for microcystin and cylindrospermopsin immunoassays. The NARS protocol includes several proficiency test samples to ensure accuracy. This project requires monthly status updates as well as a monthly technical report. The final database includes a compilation of all data.

Delaware Department of Natural Resources and Environmental Control Sediment Toxicity Tests, July-August 2018. EnviroScience performed EPA Test Method 100.1: *Hyalella azteca* 10-day Survival and Growth Test for Sediments. *Hyalella azteca* (7-14 days old) were exposed to whole sediment samples, with overlying standard water. Water was renewed twice daily. At test termination, survival and growth of amphipods exposed to the sample were compared to those of the control amphipods using statistical methods from the organisms' dry weight. Test levels exhibiting a statistically significant reduction in survival or growth were considered chronically toxic to *Hyalella azteca*.