INVITATION FOR BID #2018-01

DESCRIPTION

ENVIRONMENTAL CLEANUP
200 N. FOREST AVE., MAYVIEW, MISSOURI (FORMER MAYVIEW SCHOOL BUILDING)

See attached General Conditions, Specifications, and Bid Form for detailed information

The Mayview MO Foundation has received a grant funded by the Environmental Improvement and Energy Resources Authority (EIERA) Missouri Brownfield Revolving Loan Fund through the U.S. Environmental Protection Agency to conduct remedial activities at the 200 N. Forest Ave. Site to address asbestos containing materials and minor lead based paint abatement.

Date Issued: July 30, 2018
Owner: Mayview MO Foundation
Owners Representative: Elaine Hudson
Owner's Representative Email: centuryfarm@ctis.net
Telephone Number: 660-237-4472
Mandatory Pre-Bid Conference and Site Walk: 10:30 a.m., Thursday, August 23, 2018

Submit Bids to:

Mayview MO Foundation
c/o Kenneith Rinne
3605 Pine
Higginsville, MO 64037

SEALED BIDS MUST BE PHYSICALLY RECEIVED PRIOR TO **4:00 P.M. on Friday, August 31, 2018.** Bids will be opened by the Mayview MO Foundation at the location listed above.

- Bids shall be submitted on the Bid-Proposal Form provided and must be manually signed by the individual authorized to legally bind the company.
- Bids shall be submitted with the IFB number clearly indicated on the outside of the mailing envelope.
- Bids received after the opening date and time will be rejected.
- The attached Terms and Conditions shall become part of contract resulting from this solicitation.
- ***FAXED/EMAILED BIDS WILL NOT BE ACCEPTED.***

Table of Contents

ATTACHMENTS

INSTRUCTION TO BIDDERS

01. Opening Location
The Bids will be opened at 3605 Pine, Higginsville, MO 64037

02. IFB Delivery Requirements
Any Bids received after the above stated time and date will not be considered. It shall be the sole responsibility of the bidder to have their Bid delivered before the due date and time indicated. If a Bid is sent by U.S. Mail, the bidder shall be responsible for its timely delivery. Bids delayed by mail shall not be considered, shall not be opened, and shall be rejected. Arrangements may be made for their return at the bidder's request and expense. Bids may be mailed and accepted if the signed bid form and required information was mailed and received prior to the due date and time. Bids sent by email will not be accepted.

03. Sealed and Marked
If sent by mail, one original signed Bid shall be submitted in one sealed package, clearly marked on the outside of the package with the Invitation for Bid number and addressed to:

Mayview MO Foundation
c/o Kenneith Rinne
3605 Pine
Higginsville, MO 64037

04. Legal Name and Signature
Bids shall clearly indicate the legal name, address, and telephone number of the bidder (company, firm, corporation, partnership, or individual). Bids shall be manually signed above the printed name and title of signer on the Affidavit of Compliance page. The signer shall have the authority to bind the company to the submitted Bid. Failure to properly sign the Bid form shall invalidate same, and it shall not be considered for award.

05. Corrections
No erasures are permitted. If a correction is necessary, draw a single line through the entered figure and enter the corrected figure above it. Corrections must be initialed by the person signing the Bid.

06. Clarification and Addenda
Each bidder shall examine all Invitation for Bid documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries or suggestions, concerning interpretation, clarification, or additional information pertaining to the Invitation for Bid shall be made through the listed representative for the Mayview MO Foundation (Owner) in writing or through email. The Mayview MO Foundation shall not be responsible for oral interpretations given by any representative. The issuance of written addenda is the official method whereby interpretation, clarification, or additional information can be given.

It shall be the responsibility of each bidder, prior to submitting their Bid, to contact the Owner's representative at phone number 660-237-4472, to determine if addenda were issued and to make such addenda a part of their Bid.

07. IFB Expenses
All expenses for bid making are to be borne by the bidder.

08. Irrevocable Offer
Any Bid may be withdrawn up until the due date and time set for opening of the IFB. Any Bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a minimum period of 90 days to sell to the Owner the goods or services set forth in the IFB, until one or more of the Bids have been duly accepted by the Owner.

09. Responsive and Responsible Bidder
To be responsive, a bidder shall submit a Bid which conforms in all material respects to the requirements set forth in the Invitation for Bid. To be a responsible bidder, the bidder shall have the capability in all respects to perform fully the contract requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment and credit which will ensure good faith performance. The lowest responsible bidder shall mean the bidder who makes the lowest Bid to sell goods or services of a quality which conforms closest to the quality of goods or services set forth in the specifications or otherwise required by the Owner and who is known to be fit and capable to perform the Bid as made.

10. Reserved Rights
The Owner reserves the right to make such investigations as it deems necessary to make the determination of the bidder's responsiveness and responsibility. Such information may include, but shall not be limited to: current financial statement, verification of availability of equipment and personnel, and past performance records.

11. The Right to Audit
The bidder agrees to furnish supporting detail as may be required by the Owner to support charges or invoices, to make available for audit purposes all records covering charges pertinent to the purchase, and to make appropriate adjustments in the event discrepancies are found. The cost of any audit will be paid by the Owner. The Owner shall have the right to audit the bidder's records pertaining to the work/product for a period of three (3) years after final payment.

12. Applicable Law
All applicable laws and regulations of the State of Missouri, will apply to any resulting agreement, contract, or purchase order.

13. Right to Protest
Protestors shall seek resolution of their complaints with the Owner's representative.

Any protest shall state the basis upon which the solicitation or award is contested and shall be submitted within ten (10) calendar days after such aggrieved person knew or could have reasonably been expected to know of the facts giving rise thereto.

14. Ethical Standards
With respect to this IFB, if any bidder violates or is a party to a violation of the general ethical standards of the State of Missouri Statues, such bidder may be disqualified from furnishing the goods or services for which the Bid is submitted.

15. Collusion
By offering a submission to this Invitation for Bid, the bidder certifies the bidder has not divulged, discussed, or compared the Bid with other bidders and has not colluded with any other bidder or parties to this IFB whatsoever. Also, the bidder certifies, and in the case of a joint Bid, each party thereto certifies as to their own organization, that in connection with this IFB:

a. Any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor.

b. Any prices and/or cost data for this Bid have not knowingly been disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the scheduled opening directly or indirectly to any other bidder or to any competitor.

c. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a Bid for the purpose of restricting competition.

d. The only person or persons interested in this Bid, principal or principals are named therein and that no person other than therein mentioned has any interest in this Bid or in the contract to be entered into.

e. No person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee exempting bona fide employees or established commercial agencies maintained by the Purchaser for the purpose of doing business.

16. Contract Forms
Any agreement, contract, or purchase order resulting from the acceptance of a Bid shall be on forms either supplied by or approved by the Owner.

17. Liability and Indemnity

a. In no event shall the Owner be liable to the Contractor for special, indirect, or consequential damages, except those caused by the Owner's gross negligence or willful or wanton misconduct arising out of or in any way connected with a breach of this contract. The maximum liability of the Owner shall be limited to the amount of money to be paid or received by the Owner under this contract.

b. The Contractor shall defend, indemnify and save harmless the Owner, its elected or appointed officials, agents and employees from and against any and all liability, suits, damages, costs (including attorney fees), losses, outlays and expenses from claims in any manner caused by, or allegedly caused by, or arising out of, or connected with, this contract, or the work or any subcontract thereunder (the Contractor hereby assuming full responsibility for relations with subcontractors), including, but not limited to, claims for personal injuries, death, property damage, or for damages from the award of this contract to Contractor.

c. The Contractor shall indemnify and hold the Owner harmless from all wages or overtime compensation due any employees in rendering services pursuant to this agreement or any subcontract, including payment of reasonable attorneys' fees and costs in the defense of any claim made under the Fair Labor Standards Act, the Missouri Prevailing Wage Law or any other federal or state law.

18. IFB Forms, Variances, Alternates
Bids must be submitted on attached IFB forms, although additional information may be attached. Bidders must indicate any variances from the Owner's requested specifications and/or terms and conditions, on the IFB Affidavit of Compliance. Otherwise, bidders must fully comply with the Owner requested specifications and terms and conditions. Alternate Bids may or may not be considered at the sole discretion of the Owner.

19. Bid Form
All blank spaces must be completed with the appropriate response. The bidder must state the price, written in ink, for what is proposed to complete each item of the project. Bidders shall insert the words "no bid" in the space provided for an item for which no Bid is made. The bidder shall submit an executed Bid form, affidavit of compliance with other requested documents.

20. Modifications or Withdrawal of Bid
A modification for a Bid already received will be considered only if the modification is received prior to the time announced for opening of Bids. All

modifications shall be made in writing, executed, and submitted on the same form and manner as the original Bid. Modifications submitted by telephone, fax, or email will not be considered.

21. Errors in Bids

Bidders or their authorized representatives are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting Bids; failure to do so will be at the bidder's own risk. Neither law nor regulations make allowance for errors either of omission or commission on the part of bidders. In case of error of extension of prices in the Bid, the unit price shall govern.

22. Prices Bid

Give both unit price and extended total. Price must be stated in units of quantity specified in the bidding specifications. In case of discrepancy in computing the amount of the Bid, the unit price of the Bid will govern. All prices shall be F.O.B. destination, freight prepaid (unless otherwise stated in special conditions). Each item must be bid separately and no attempt is to be made to tie any item or items in with any other item or items. If a bidder offers a discount on payment terms, the discount time will be computed from the date of satisfactory delivery at place of acceptance and receipt of correct invoice at the office specified. Payment terms shall be Net 30 if not otherwise specified. Pre-payment terms are not acceptable.

23. Discounts

Any and all discounts except cash discounts for prompt payments must be incorporated as a reduction in the Bid price and not shown separately. The price as shown on the Bid shall be the price used in determining award(s).

24. Descriptive Information

All equipment, materials, and articles incorporated in the product/work covered by this IFB are to be new and of suitable grade for the purpose intended. Brand or trade names referenced in specifications are for comparison purposes only. Bidders may submit Bids on items manufactured by other than the manufacturer specified when an "or equal" is stated.

25. Deviations to Specifications and Requirements

When bidding on an "or equal," Bids must be accompanied with all descriptive information necessary for an evaluation of the proposed material or equipment such as the detailed drawings and specifications, certified operation and test data, and experience records. Failure of any bidder to furnish the data necessary to determine whether the product is equivalent, may be cause for rejection of the specific item(s) to which it pertains. All deviations from the specifications must be noted in detail by the bidder on the Affidavit of Compliance form, at the time of submittal of Bid. The absence of listed deviations at the time of submittal of the Bid will hold the bidder strictly accountable to the specifications as written. Any deviation from the specifications as written and accepted by the Owner may be grounds for rejection of the material and/or equipment when delivered.

26. Quality Guaranty

If any product delivered does not meet applicable specifications or if the product will not produce the effect that the bidder represents to the Owner, the bidder shall pick up the product from the Owner at no expense. Also, the bidder shall refund to the Owner any money which has been paid for same. The bidder will be responsible for attorney fees in the event the bidder defaults and court action is required.

27. Quality Terms

The Owner reserves the right to reject any or all materials if, in its judgment, the item reflects unsatisfactory workmanship, manufacturing, or shipping damages.

28. Tax-Exempt

The Owner is exempt from sales taxes.

29. Awards

a. Unless otherwise stated in the Invitation for Bid, cash discounts for prompt payment of invoices will not be considered in the evaluation of prices. However, such discounts are encouraged to motivate prompt payment.

b. As the best interest of the Owner may require, the right is reserved to make awards by item, group of items, all or none, or a combination thereof; to reject any and all Bids or waive any minor irregularity or technicality in Bids received.

c. Awards will be made to the Bidder whose Bid (1) meets the specifications and all other requirements of the Invitation for Bid and (2) is the lowest and best Bid, considering price, delivery, responsibility of the bidder, and all other relevant factors.

30. Authorized Product Representation

The successful bidder(s) by virtue of submitting the name and specifications of a manufacturer's product will be required to furnish the named manufacturer's product. By virtue of submission of the stated documents, it will be presumed by the Owner that the bidder(s) is legally authorized to submit and the successful bidder(s) will be legally bound to perform according to the documents.

31. Regulations

It shall be the responsibility of each bidder to assure compliance with OSHA, EPA, Federal, and State of Missouri rules, regulations, or other requirements, as each may apply.

32. Termination of Award

Any failure of the bidder to satisfy the requirements of the Owner shall be reason for termination of the award. Any Bid may be rejected in whole or in part for good cause when in the best interest of the Owner.

33. Royalties and Patents

The successful bidder(s) shall pay all royalties and license fees for equipment or processes in conjunction with the equipment being furnished. Bidder

shall defend all suits or claims for infringement of any patent right and shall hold the Owner harmless from loss on account or cost and attorney's fees incurred.

34. Equal Employment Opportunity Clause
The City of LaGrange, in accordance with the provision of Title VI of the Civil Rights Act of 1964 (78 Stat. 252) and the Regulations of the Department of Commerce (15 CFR, Part 8) issued pursuant to such Act, hereby notifies all bidders that affirmatively ensure that in any contract entered into pursuant to this advertisement that minority businesses will be afforded full opportunity to submit Bids in response to this advertisement and will not be discriminated against on the grounds of race, color, or national origin in consideration for award.

35. Bid Tabulation
Bidders may request a copy of the bid tabulation of the Invitation for Bid.

36. Budgetary Constraints
The Owner reserves the right to reduce or increase the quantity, retract any item from the Bid, or upon notification, terminate entire agreement without any obligations or penalty based upon availability of funds.

37. Order of Precedence
Any and all Special/General Conditions and Specifications attached hereto, which varies from the instruction to bidders, shall take precedence.

38. Affidavit for Service Contracts
The Bidder represents, in accordance with RSMO 285.530.2 that they have not employed, or subcontracted with, unauthorized aliens in connection with the scope of work to be done under the IFB and agrees to provide an affidavit to the Owner affirming that they have not, and will not in connection with the IFB, knowingly employ, or subcontract with, any person who is an unauthorized alien.

39. Inspection and Acceptance
No item(s) received by the Owner pursuant to this contract shall be deemed accepted until the Owner has had reasonable opportunity to inspect the item(s). Any item(s) which are discovered to be defective or which do not conform to any warranty of the Seller upon inspection may be returned at the seller's expense for full credit or replacement. If at a later time, the defects were not ascertainable upon the initial inspection may also be returned at the Seller's expense for full credit or replacement. The Owner's return of defective items shall not exclude any other legal, equitable or contractual remedies the Owner may have.

200 N. FOREST AVE., MAYVIEW, MISSOURI ENVIRNOMENTAL CLEANUP
INVITATION FOR BID #2018-01
GENERAL TERMS AND CONDITIONS

1. **INTRODUCTION:** The Mayview MO Foundation (Owner) plans to conduct remedial activities to address asbestos-containing material (ACM) and Lead Based Paint (LBP) at the 200 N. Forest site located in Mayview, Missouri. The Owner is utilizing the EIERA's Missouri Brownfields Revolving Loan Fund Program to help facilitate the remedial activities. Currently, the project is enrolled in the Missouri Department of Natural Resources /Brownfields Voluntary Cleanup Program (MDNR/BVCP). This project is being conducted to remediate building materials containing ACM and LBP. A Remedial Action Plan (RAP) describing the site and planned remedial activities has been completed by Seagull Environmental Technologies, Inc. (Seagull) and is provided as Attachment B.

   The contractor shall provide all labor and materials to complete the scope as specified herein, and will be responsible for finalizing the RAP for approval by MDNR/BVCP. This will include providing all necessary documentation, reports, sampling, and other required items for participation in the MDNR/BVCP as well as following all BVCP requirements. These requirements include a Health and Safety Plan and a Quality Assurance Project Plan (QAPP). The applicable MDNR generic QAPP may be used, however if deviation from the generic QAPP is necessary, a Site-specific QAPP Addendum shall be prepared and submitted to the MDNR/ BVCP. The selected contractor will be responsible for acquiring all permits required for the project. It will be the contractor's responsibility to obtain a Certificate of Completion from the MDNR/BVCP.

   Term: The selected contractor must be able to complete all remedial activities by January 31, 2019.

2. **PRE-BID SITE VISIT**: The contractor shall be presumed to have made a reasonable inspection of the premises prior to the time of bidding and shall be held responsible for all information available through such inspection. The contractor shall immediately upon discovery, bring to the attention of the Owner any conflicts that may occur among the various provisions of the specifications. The Owner shall resolve such conflicts and shall be responsible for any costs reasonably incurred by the contractor due to such conflict. Failure of the contractor to bring conflicts or exceptions to the attention of the Owner shall allow the Owner to require any change deemed necessary before acceptance by the Owner.

   A **mandatory pre-bid site visit** will be held for this bid on **August 23, 2018 at 10:30 a.m.** at 200 N. Forest Ave., Mayview, Missouri. At that time a site walk will be conducted to view the site building. Please bring a flashlight.

3. **INVESTIGATION OF CONDITIONS**: Before submitting a bid, Bidders should carefully examine the specifications, visit the site of the work, and fully inform themselves as to all existing conditions and limitations including verification of measurements and quantities and shall include in the bid a sum to cover the cost of items of work to be performed and, if awarded the contract, shall not be allowed any extra compensation by reason of any matter or item concerning which such Bidder might have fully informed himself prior to the bidding, and the successful Contractor must employ, so far as possible such methods and means in carrying of his work as will not cause any interruption or interference with any other Contractor.

4. **PERFORMANCE BOND AND A LABOR, AND MATERIALS PAYMENT BOND:** The Contractor shall furnish a Performance Bond and a Labor and Materials Payment Bond with surety approved by the Owner and on the forms approved by the Owner (provided in this bid document as Attachment C), each bond shall be in the full amount of the contract conditioned upon the full and faithful performance of all major terms and conditions of this contract and payment of all labor and material suppliers. It is further mutually agreed between the parties hereto that if at any time after the execution of this agreement and the surety bond(s) hereto attached for its

faithful performance and payment of labor and material suppliers, the Owner shall deem the surety or sureties upon such bond(s) to be unsatisfactory, or if, for any reason, such bond(s) ceases to be adequate to cover the performance of the work, the Contractor shall, at its expense, within five (5) days after the receipt of notice from the Owner to do so, furnish an additional bond or bonds, in such form and amount, and with such surety or sureties as shall be satisfactory to the Owner. In such event no further payment to the Contractor shall be deemed to be due under this contract until such new or additional security for the faithful performance of the work and the payment of labor and material suppliers shall be furnished in a manner and form satisfactory to the Owner. The corporate surety on any performance or payment bond must be licensed by the State of Missouri and if the required bond exceeds $25,000 must be listed in United States Treasury Circular 570.

5. **PREVAILING WAGE REQUIREMENT:** The work performed under this Agreement is subject to the Davis-Bacon Act. It is agreed that all workman employed by the Contractor, and any subcontractor employed under him, will be paid not less than the prevailing wage as determined by appropriate governmental authority and the Annual Wage Order attached hereto and made a part hereof. It is agreed that the contract or sums payable to the Contractor for the performance of this agreement are not subject to increase as a result of any change in the amount of such wage determined pursuant to Section 290.210 et. seq. R.S.Mo. The Federal Prevailing Wage rates are provided as Attachment G. The Contractor shall be required to complete an affidavit stating that he or she has complied with the prevailing wage law prior to final payment by the Owner.

6. **QUANTITIES:** The quantities listed herein are estimates. The Owner will not guarantee any amount of work related to the contract. The contractor will be paid for quantities actually constructed or performed as determined by field measurement agreed upon by the Contractor and the Owner (or Owner's representative).

7. **FUNDING:** The funding for this project is through the EIERA Missouri Brownfields Revolving Loan Fund from the U.S. Environmental Protection Agency (EPA); therefore, the contractor shall be responsible for necessary reports to satisfy the requirements of the granting agencies. The following requirements shall be applied to the current requirements of the RFP, and shall be followed as applicable.

(A) Nondiscrimination in Employment - Bidders on this work will be required to comply with the President's Executive Order Number 11246. Requirements for bidders and contractors under this order are explained in the specifications.

(B) Davis-Bacon - The sub-recipient assures that it, as well as its sub-recipients if required by future OMB guidance, shall fully comply with said section in that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the federal government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40,. United States Code (Davis-Bacon Act). It is understood that the Secretary of Labor has the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code, if applicable.

(C) Non-segregated Facilities – The successful bidder will be required to submit a certification of Non-segregated Facilities and to notify prospective subcontractors of the requirement for such a certification where the subcontract exceeds $10,000.

(D) Equal Employment Opportunity - 41 CFR 6044 published April 7, 1978 and amended October 3, 1980, "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity" (Executive Order 11246) (Notice) and Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) (Specifications), as applicable.

(E) Debarment and Suspension - Executive Order 12549 - Debarment and Suspension establishes procedures which require EPA to deny any individual, organization, or unit of government the opportunity to participate in federally-assisted programs because of misconduct or poor performance. The General Services Administration (GSA) publication entitled "Lists of Parties Excluded from Federal Procurement or Non-procurement Programs" will identify those who are prohibited from the bidding process. Bidders are required to submit the certification included as Attachment F with their bid proposal, if applicable.

(F) Project Sign - A project sign must be prominently displayed at the construction site. This sign will be provided by the Owner.

(G) Access to Construction Site and Contract Records - The contractor shall provide access to the project site and project records by the, Environmental Improvement and Energy Resources Authority, Missouri Department of Natural Resources, the EPA, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

(H) Historical or Archaeological - Required by P.L. 93-291, if applicable.

If during the course of construction evidence of deposits of historical or archaeological interest is found, the contractor shall cease operations affecting the find and shall notify the owner who shall notify the Missouri Department of Natural Resources and the Director, Division of Parks, P.O. Box 176, 1101 Riverside Dr., Jefferson City, Missouri 65102, Telephone (573) 751-2479. No further disturbances of the deposits shall ensue until the contractor has been notified by the owner to proceed. The owner will issue a notice to proceed only after the state official has surveyed the find and made a determination to the Missouri Department of Natural Resources and the owner. Compensation to the contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or change order provisions of the specifications.

(I) Late Payment Clause - If the Owner fails to make payment thirty (30) days after receipt of the CONTRACTORS application for payment, in addition to other remedies available to the CONTRACTOR, then interest shall be added to each such payment in accordance with section 34.057 RSMo. (Supp. 1991).

(J) Clean Air Act - The contractor shall comply with the Clean Air Act (42 U.S.C. 7506(C)), if applicable.

(K) Clean Water Act - The contractor shall comply with the Clean Water Act (33 U.S.C. 1368), if applicable.

(L) Contract Work Hours and Safety Standards Act - The contractor shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR part 5), if applicable.

(M) Energy Efficiency Requirements - The contractor shall comply with the mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (P.L. 94-163, 89 Stat. 871). CFR 31.36(i)(13), if applicable.

(N) False Claims Act -- The contractor, as well as its subcontractors, if required by future OMB guidance, shall promptly refer to the State of Missouri or other appropriate Inspector General any credible evidence that a principal, employee, agent, contractor, sub-grantee, subcontractor or other person has submitted a false claim under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict or interest, bribery, gratuity or similar misconduct involving those funds.

(O) Recycled Materials - In accordance with Section 6002 of the Resource Conservation and Recovery Act (RCRA) (U.S.C. 6962), preference shall be given to the procurement of specific products containing recycled materials identified in guidelines developed by the Environmental Protection Agency. Current guidelines are contained in 40 CFR 247-254.

(P) Small Business Act - Prior to awarding contracts, the loan recipient and any contractor awarding subcontracts must take the following affirmative steps in accordance with Section 129 of Public Law 100-590, Small Business Administration Reauthorization and Amendment Act of 1988, if applicable:

a. Placing Small Business in Rural Areas (SBRA) on solicitation lists;

b. Ensuring that SBRAs are solicited whenever they are potential sources;

c. Dividing total requirements, when economically feasible, into small tasks or quantities to permit maximum participation by SBRAs;

d. Establishing delivery schedules, where the requirements of work will permit which would encourage participation by SBRAs;

e. Utilizing the services of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce, as appropriate.

(Q) Storm Water Permit - In accordance with 10 CSR 20-6.200(l)(A) and (1)(B)(7), if the proposed project disturbs one (1) contiguous surface acre or more of land, then a land disturbance permit to discharge storm water is required. If the owner's population is greater than ten thousand (10,000) or is located within an urbanized area and/or the design flow of the wastewater treatment plant is greater than or equal to 1 MGD, then storm water discharges should be included in the existing NPDES permit. In the first case, the owner must ensure that the storm water discharges are covered by their municipal separate storm sewer system (MS4) permit. In the second case, the owner should check with the appropriate Regional Office to ensure that storm water discharges are covered in the existing permit for the wastewater treatment plant. For further information, contact the Missouri Department of Natural Resources, Water Protection Program, Permits Section, P.O. Box 176, Jefferson City, Missouri 65102. Telephone: (573) 751-6825.

(R) Employment of Unauthorized Aliens Prohibited - The contractor must comply with section 285.530 RSMo. and, if required, future OMB guidance regarding employment of unauthorized aliens prohibited. (See Attached Affidavit in Attachment D).

Pursuant to §285.530.1, RSMo, the subrecipient assures that it, as well as its subrecipients if required by future OMB guidance, do not knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the State of Missouri, and shall affirm, by sworn affidavit and provision of documentation, its enrollment and participation in a federal work

authorization program with respect to the employees working in connection with the contracted services. Further, the subrecipient assures that it, as well as its subrecipients if required by future OMB guidance, shall sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

In accordance with sections 285.525 to 285.550, RSMo a general contractor or subcontractor of any tier shall not be liable when such contractor or subcontractor contracts with its direct subcontractor who violates subsection 1 of section 285.530, RSMo if the contract binding the contractor and subcontractor affirmatively states that the direct subcontractor is not knowingly in violation of subsection 1 of section 285.530, RSMo and shall not henceforth be in such violation and the contractor or subcontractor receives a sworn affidavit under the penalty of perjury attesting to the fact that the direct subcontractor's employees are lawfully present in the United States.

(S) Privity of Contract - Neither the Environmental Improvement and Energy Resources Authority nor its employees are or will be a party to the contract(s) at any tier.

(T) Geographical Preference Prohibited -40 CFR 31.36 (c)(2) prohibits the use of geographical preferences, if applicable.

(U) Records Retention – The contractor and all sub-contractors shall retain all project related records for three years after final payment(s) and all other pending matters are closed.

(V) MBE/WBE – The following documents will need to be completed if applicable: Missouri State Revolving Fund and State Grant & Loan Program' Procedures for Implementation of Minority Business Enterprise/Women's Business Enterprise requirements and the Minority and Women's Business Enterprise Utilization Worksheet. The contractor shall make and document a good faith effort to use MBE/WBE's and fill out the reporting forms as applicable. The goals are 10% MBE and 5% WBE.

8. **CENTRAL CONTRACTOR REGISTRATION:** In accordance with the Federal Funding Accountability Act of 2006, the contractor assures that it, as well as its subcontractor(s), shall register in the Central Contractor Registration (CCR) database at https://www.sam.gov/portal/public/SAM/, and maintain current registration at all times during the pendency of this contract. In order to register in CCR, a valid Dun and Bradstreet Data Universal Numbering System (DUNS) Number is required. See www.dnb.com

9. **INSURANCE REQUIREMENTS:** Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall secure and maintain at its own cost and expense, throughout the duration of this Contract and until the work is completed and accepted by the Owner, insurance of such types and in such amounts as may be necessary to protect it and the interests of the Owner against all hazards or risks of loss as hereunder specified or which may arise out of the performance of the Contract Documents. The form and limits of such insurance, together with the underwriter thereof in each case, are subject to approval by the Owner. Regardless of such approval, it shall be the responsibility of the contractor to maintain adequate insurance coverage at all times during the term of the Contract. Failure of the Contractor to maintain coverage shall not relieve it of any contractual responsibility or obligation or liability under the Contract Documents.

The minimum coverage for the insurance referred to herein shall be in accordance with the requirements established below:

A. **Workers' Compensation** Statutory

Employer's Liability	
Bodily Injury by Accident	$100,000 Each Accident
Bodily Injury by Disease	$500,000 Policy Limit
Bodily Injury by Disease	$100,000 Each Employee

B. Commercial General Liability Limits: Bodily Injury and Property Damage

Each Occurrence, including Products:	$1,000,000
Personal & Advertising Injury	$1,000,000
General Aggregate:	$2,000,000

C. Automobile Liability Insurance: Policy shall protect the Contractor against claims for bodily injury and/or property damage arising out of the ownership or use of any owned, hired, and/or non-owned vehicle:

Bodily Injury Limits:	$1,000,000 for each person and $1,000,000 for each accident
Property Damage Limits:	$1,000,000 for each accident
	OR
	$1,000,000 Combined Single Limits, including bodily injury and property damage

D. **Subcontracts**: In case any or all of this work is sublet, the Contractor shall require the subcontractor to procure and maintain all insurance required in subparagraphs (A), (B) and (C) hereof and in like amounts. Contractor shall require any and all subcontractors with whom it enters into a contract to perform work on this project to protect the Owner through insurance against applicable hazards or risks and shall provide evidence of such insurance.

E. **Notice:** The Contractor and/or subcontractor shall furnish the Owner prior to beginning the work, satisfactory proof of carriage of all the insurance required by this contract, with the provision that policies shall not be canceled, modified or non-renewed without thirty (30) days written notice to the Owner.

10. REPAIR OF DAMAGES: It is the responsibility of the Contractor to repair any damages incurred in the area that is directly related to the project. When damages occur, the Owner is to be notified and shall inspect the repairs upon completion.

11. SAFETY: Contractor shall comply with all applicable OSHA, State of Missouri Safety Regulations and comply with all construction safety requirements of local authorities having jurisdiction. Contractor shall exercise all due caution to exclude the public from the work area and especially from contact with any hazardous materials.

A project-specific Health and Safety Plan (HASP) will be prepared by the Contractor to govern the Contractor's field work activities at the site. The Contractor will provide qualified staff with proper/required training to perform remediation activities. The Owner reserves the right to ask Contractor for documentation of training.

12. TRAINING AND CERTIFICATION REQUIREMENTS: The Contractor must meet specific training requirements specified by State and Federal laws and regulations. The Contractor shall remain responsible for compliance with these requirements through completion of the project. The Site Safety Officer and field personnel must have appropriate health and safety training as specified in OSHA, 29 CFR 1910.120 (HAZWOPER). Specific safety measures shall be clearly outlined in the project Health and Safety Plan.

Abatement procedures will require specific safety and air monitoring provisions to maintain worker safety and ensure public exposure risks are not introduced. Abatement contractors should clearly demonstrate the ability

to maintain a safe work environment prior to the selection process. These provisions will be detailed in the selected Contractor's site-specific Health and Safety Plan; however, submitted bid documents should clearly demonstrate the Contractor's ability to maintain all required safety controls.

Abatement activities shall be managed in the field by properly trained personnel, as required under governing federal NESHAP and State of Missouri licensing, training, and accreditation programs. These include specific requirements for project design, abatement, and verification inspections and sampling. Regulatory references and links to specific regulations and requirement are provided below:

The National Emission Standard for Asbestos - 40 CFR Part 61, Subpart M (61.140 - 61.157)

Missouri Air Conservation Law Sections 643.225 - 643.250 of the Revised Statues of Missouri
643.225 643.228 643.230 643.232 643.235 643.237 643.240 643.242 643.245 643.250

Missouri State Regulations 10 CSR 10-6.241 Asbestos Projects-Registration, Notification and Performance Requirements, and 10 CSR 10-6.250 Asbestos Abatement Projects - Certification, Accreditation and Business Exemption Requirements

Specific training and licensing requirements are outlined below. These requirements are not all inclusive. It is the responsibility of the bidding Contractor to fully understand and maintain compliance with all training and licensing requirements throughout the duration of the project.

- Missouri licensed asbestos abatement contractor (abatement/removal activities)
- Missouri-certified asbestos inspector (additional characterization & clearance sampling)
- Missouri-certified air sampling professionals
- Missouri-certified asbestos project designer (as required for planning, RAP & design)

Additional training and certifications will apply for LBP removals if performed. These include specific State of Missouri requirements for project design, abatement, and verification inspections and sampling [19 CSR 30-70]. This information is available for download at the following Missouri Department of Health and Senior Services link.

13. **SITE CLEANLINESS:** The Contractor shall give special attention to keeping the work site clean and free from trash and debris.

14. **PERMITS:** All permits necessary to complete the project shall be secured and paid for by the Contractor. The Contractor shall give all notices and comply with all laws, ordinances and regulations bearing on the conduct of the work (as specified).

15. **SANITARY PROVISIONS:** The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the regulations of the State Board of Health and any sanitary regulations of the community in which work is being performed. Temporary toilets shall be provided as required.

16. **OTHER DELAYS:** If the Contractor or his subcontractor experiences documented hindrances or delays which, in his opinion, are not usually to be expected in the performance of the work, and which affect the performance of the work, he may request a change in the agreement. The Contractor shall be entitled to an extension of the time for contract completion, but such contract time of completion shall be extended no more than one day for each day of delay. Any such agreement to modify or extend the time of contract completion shall be made in writing by formal addendum to the contract. The time of application of liquidated damages shall not begin until after the amended date for contract/phase completion. Such hindrances and delays may include, but not be

limited to, acts or failures to act by other contractors employed by the Owner, fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

17. **PUNCH LIST:** A list of incomplete items (typically referred to as a "punch list") will be issued at Substantial Completion provided that no incomplete item will prevent the Owner's use of the space/facility as it is intended to be used, including life safety components. After Substantial Completion and issuance of the "punch list", subsequently discovered items which are not complete, and/or in nonconformance with the Contract may be added to the list until such time as Final Acceptance. Payment and/or exclusion of any item from a "punch list" shall not relieve the Contractor of the obligation to fulfill all requirements of the Contract. All punch list items shall be completed within thirty (30) days of Final Acceptance by the Owner and prior to final payment.

18. **CHANGES IN WORK:** The Owner, without giving notice to the surety and without invalidating this contract may make changes by altering, adding or deducting from the work with the contract sum being adjusted accordingly. All such work and any approved time extensions shall be added to the contract by Contract addendum. Each contract change shall include all cost required to perform the work including all labor, material, equipment, overhead, profit, delays, disruptions or other miscellaneous expenses. The Contractor shall provide a detailed cost breakdown for all changes in work to the Owner. The percentage of overhead and profit shall not increase as a result of any change in work.

19. **PROTECTION OF WORK:** The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect from injury or loss arising in connection with the contract. He shall make good any such damage, injury, or loss, except as such may be directly due to error in Contract documents.

20. **BASIS FOR AWARD:** Other factors that will be considered besides the lowest price are:

    A. Quality of workmanship as represented by references;

    B. Capabilities to do required work; and

    C. Completion Date.

    The contract resulting from this solicitation will be awarded to that responsible offerer whose offer, conforming to the invitation is determined most advantageous to the Owner, price and other factors considered. The offerer's proposal shall be in the form prescribed by this invitation and shall contain a response to each of the areas identified which affects the evaluation factors for an award.

    Exceptions to the bid may be considered if determined minor in nature and acceptable to the Owner's application. All exceptions shall be noted on the attached "Affidavit of Compliance" form included as Attachment D.

21. **PAYMENT TERMS:** The Bidder shall clearly state their prompt payment discount and net payment terms in the space provided on the Owner's Bid Form or Proposal page. If this section is not completed, the Owner will assume terms are net 30 days.

22. **PAYMENTS:** Progress payments will be made each month in the amount of 90 percent of the estimated value of the services provided at the job site during the previous calendar month, providing the work is reasonably complete. The Owner will withhold 10 percent of the amount of each progress payment. The last payment due for each contract will be paid by the Owner to the Contractor only after the project has received a Certificate of Completion from the MDNR/BVCP and the Contractor has furnished the Owner with an affidavit stating that all persons, firms, or corporations who have furnished labor or materials, employed directly or indirectly in the work, have been paid in full. The Owner shall rely on said affidavit at face value. The Owner shall have the right

to demand and receive from the Contractor an affidavit stating that payment in full has been made for all labor, services, and materials incorporated into the work, for the period of time for which the progress payment is due. The Contractor does hereby release, remise, and quit claim any and all rights he may enjoy to perfect any lien or any other type of statutory common law or equitable lien against this project.

23. PAYMENTS WITHHELD: The Owner may withhold or nullify in whole or part any payment to the Contractor to such extent as may be necessary to protect the Owner from loss on account of:

A. Defective work not remedied. When a notice of noncompliance is issued on an item or items, corrective action shall be undertaken immediately. Until corrective action is completed, no monies will be paid and no additional time will be allowed for correction of the item or items. The cost of corrective action(s) shall be solely borne by the Contractor.

B. A reasonable doubt that the contract can be completed for the balance then unpaid.

C. Failure of the Contractor to maintain satisfactory progress in accordance with the Contractors progress schedule.

D. When the Owner is satisfied the Contractor has remedied the above ground(s) for withholding payment, payment shall be made for the amounts withheld.

24. SUPERINTENDENT: The Contractor shall keep on site, during progress of the work, a competent Superintendent satisfactory to the Owner. The Superintendent shall represent the contractor in his absence and all direction given to him shall be as if given to the Contractor. He shall carefully study and compare all drawings, specifications and other instruction and shall, at once, report to the Owner and its representatives any errors, inconsistency or omission which he may discover. The Superintendent shall not be changed except for good cause, and with the consent of the Owner. Within ten (10) calendar days of the Notice of Award, the contractor shall provide the name and qualifications of the Superintendent to the Owner.

25. DAILY CONSTRUCTION REPORTS: The Contractor shall maintain a daily construction report recording the following information concerning events at the site; and submit a duplicate copy to the Owner at a weekly interval:

1. List of Subcontractors at the site
2. Approximate count of personnel at the site
3. Accident and unusual events
4. Meetings and significant decisions
5. Stoppages, delays, shortages or losses
6. Orders and requests of governing authorities
7. Change Orders received, implemented
8. Services connected, disconnected

26. PROGRESS SCHEDULE: Within ten (10) calendar days after receipt of Notice of Award, the Contractor shall submit to the Owner for approval, a progress schedule in reproducible form utilizing a critical path method or other similar schedule, showing the rate of progress he agrees to maintain and the order in which he proposes to carry out various phases of work in order to attain the completion date as required by the Contract. Particular attention shall be devoted to those elements to be performed in the early stages of the effort to preclude overstatement that would result in an imbalance in payments and exceed the value of work performed. Work elements shall be limited to those tasks, which will indicate the progress of the work and which, may be readily identified and measured by personnel monitoring the contractor's progress. Normally the

percentage factors of each work element should be related to the total value of the contract. No work shall begin without the Owner's review/approval of the progress schedule.

27. **MISUNDERSTANDINGS:** No consideration will be granted for any alleged misunderstanding of the material to be furnished or work to be done, it being understood that the submission of a proposal and the entering into a contract is an agreement with all the items and conditions referred to herein.

28. **ASSIGNED WORK AREAS:** The Contractor shall be responsible to work in only the assigned work areas and only park at the designated areas.

29. **SPECIFICATION AND PLAN VARIANCE:** If the Contractor observes that the specifications and plans are at a variance therewith, he shall promptly notify the Owner in writing and any necessary changes shall be adjusted. If the Contractor performs any work contrary to such law, ordinance, rules and regulations, and does not comply with the aforesaid procedure, he shall bear all cost incidental to such violation.

30. **COORDINATION AND PRECONSTRUCTION MEETING:** Representatives of the Contractor shall attend a coordination meeting at a time and date decided by the Owner to discuss matters relative to the execution of this project. The Contractor's representative shall attend additional meetings thereafter as required by the Owner in order to expedite the work. These meetings shall be held at a place designated by the Owner.

INVITATION FOR BID
SPECIFICATIONS

SCOPE OF PROJECT: Contractor shall provide all labor, materials, equipment, supplies, taxes, insurance, fuels, permits, and any and all other items necessary to complete the work, the removal of materials, and disposal of materials and related work, as specified herein. Contractor shall complete all work.

1. **SCHEDULE:** The Contractor will be required to commence work under this contract within ten (10) calendar days after receipt of the Notice to Proceed. Work will be required to be completed by January 31, 2019.

   The Contractor is required to provide a sufficient work force and construction management so that no time extension will be granted for delay of contract award, weather conditions, utility conflicts, or Contractor scheduling of equipment or construction progress.

2. **SPECIFICATIONS:** All work shall be accomplished in accordance with this Scope of Work and the Specifications contained or referenced herein and in accordance with all local, state, and federal rules, laws, and regulations.

   As mentioned, the 200 N. Forest Ave, Mayview, Missouri property is enrolled the Missouri Department of Natural Resources Brownfields/Voluntary Cleanup Program (MDNR/BVCP). The MDNR/BVCP Project Manager is Ms. Christine O'Keefe. The site cleanup goal under the MDNR/BVCP is for unrestricted use; therefor, cleanup activities have been planned to accomplish that goal.

   The selected contractor must be currently licensed in Missouri as an Asbestos Abatement Contractor. Additionally, on site workers must be currently licensed by the State of Missouri as Asbestos Workers. A copy of the company's Asbestos Contractor certification must be submitted with the bid. Additionally, prior to commencing any site work, the remedial contractor must submit copies of their Asbestos Contractor Certifications to the MDNR/BVCP Project Manager.

   Contractor must acquire and all permits and submit all notifications necessary to complete this project.

   Contractor must submit Asbestos Project Notifications to the State of Missouri and must also complete and submit Asbestos Project Post-Abatement Reports.

   Clearance air sampling activities for asbestos must be conducted by a third party contractor hired by the remediation contractor.

   Following completion of cleanup activities, in areas of the building where cleanup activities have resulted in building openings, the contractor will be responsible for securing the building and sealing it to the outside environment. This should be accomplished by using hard/rigid materials (plywood or equivalent). The manner in which the building is secured must be approved by the Owner.

   Copies of all permits, notification documents, sampling and analysis results, and disposal documents must be provided to the Owner. All of these documents are required to be submitted as part of the Remedial Action Final Cleanup Report, which the contractor must prepare.

   A visual inspection of the remediated areas will be completed by the Owner's representative to approve completion.

3. **REMEDIAL ACTION PLAN**: The Remedial Action Plan (RAP) written for the site cleanup is included as Attachment B, and is considered part of the bid document. The RAP shall be used for the basis of the bid and the required clean up

protocol. Specific to this bid, is the abatement/cleanup of asbestos containing materials and lead based paint at the site. The bid form with this bid document contains the estimated quantities of materials to be addressed during the cleanup activities. The quantities listed are estimates. The Owner will not guarantee any amount of work related to the contract. The contractor will be paid for quantities actually constructed or performed as determined by field measurement agreed upon by the Contractor and the Owner (or Owner's representative). Please note that the site's RAP further details the materials/items to be addressed during the cleanup activities. Additionally, the RAP details confirmation sampling associated with the cleanup. The remedial contractor will be responsible for all of the required confirmation sampling associated with the cleanup. Cost associated with the confirmation sampling should be incorporated into costs for the cleanup.

Any changes to the RAP and cleanup protocol must be approved by the Owner, Environmental Improvement and Energy Resources Authority (EIERA), and MDNR/BVCP Project Manager, prior to commencing site work.

4. **HEALTH AND SAFETY PLAN**: The remedial contractor must prepare and submit a project-specific Health and Safety Plan to the Owner and MDNR/BVCP for approval prior to commencing any site work.

5. **QAPP**: The remedial contractor must prepare and submit a site specific Quality Assurance Project Plan (QAPP) to the Owner and to MDNR/BVCP for approval prior to commencing any site work.

6. **REMEDIAL ACTION FINAL REPORT**: The selected remedial contractor will be required to prepare and submit a Remedial Action Final Report to the MDNR/BVCP for approval. The Remedial Action Final Report will document all site cleanup activities, disposal quantities, and sample results. This task will not be considered complete until MDNR/BVCP has no further technical comments concerning the report. Upon completion, the contractor shall provide two copies of the report to MDNR and three copies to the Owner.

7. **DISCOVERY OF HAZARDOUS MATERIALS:** In the event previously unknown hazardous materials are discovered by the Contractor, the Contractor shall immediately suspend work in the specific location of the hazardous material and immediately notify the Owner.

FORMER MAYVIEW SCHOOL SITE CLEANUP
BID FORM – PROPOSAL

SUBMITTED BY_____
(Company Name)

Pursuant to and in accordance with the above stated Invitation for Bid, the undersigned hereby declares that they have examined the bid documents and specifications for the item(s) listed below.
The undersigned proposes and agrees, if their Bid is accepted to furnish the item(s) submitted below, including delivery to the Owner in accordance with the delivery schedule indicated below and according to the prices products/services information submitted.

Item Number	Description	Unit	Estimated Quantity	Unit Price	Extended Amount (Total)
BASE BID ITEMS					
	ASBESTOS-CONTAINING MATERIALS				
1	Roof flashing – Along roof perimeter and at penetration of 1966 addition	Sq. ft.	964	$	$
2	Multi-colored 9”x9” Vinyl Tile/Mastic – Kitchen staff lounge, cafeteria and throughout 1966 addition	Sq.. ft.	5,000 (majority in 55 gal drums)	$	$
3	Window Glaze – Windows of room at northeast corner of 1966 addition	Lin. ft.	672 (12 windows)	$	$
4	Asphalt Roofing, Roof Flashing, Roof Tar – On Roof of 1948 addition)	Sq. ft.	10,800	$	$
5	Cream 12”x12”, Tan 9”x9”, Black 2”x6”, Red 1”x2” Vinyl Tile/Mastic – Throughout gymnasium, bathrooms and hallways in 1948 addition)	Sq. ft.	8,700	$	$
6	Roof Flashing – Along roof perimeter and at penetrations of 1918 building	Sq. ft.	270	$	$
7	Carpet Mastic – Home Economics room in south central portion of 1918 building	Sq. ft.	580		$
8	Dark and Light Green 9”x9” Vinyl Tile/Mastic – Old cafeteria in 1918 building	Sq. ft.	630	$	$
9	Chalkboard Mastic – Old cafeteria in the 1918 building	Sq. ft.	10	$	$
10	Joint Compound- In office rooms on second floor of 1918 building	Sq. ft.	1,237	$	$

Item Number	Description	Unit	Estimated Quantity	Unit Price	Extended Amount (Total)
	MATERIALS CONTAINING LEAD BASED PAINT				
11	Garage Door – 1966 Addition – White Wood	Sq. ft.	128	$	$
12	Garage Door Header – 1966 Addition- White Metal	Sq. ft	10	$	$
13	Step Riser – 1966 Addition – Stage Entry East Wall – Brown Concrete	Sq. ft	16	$	$
14	Door-Original Cafeteria – Room G2 – White Wood	Sq. ft	42	$	$
15	Door Frame – Original Cafeteria – Room G2 – White Wood	Sq. ft	24	$	$
16	Door-Science Room – Room G1 – White Wood	Sq. ft	42	$	$
17	Door Frame – Science Room – Room G1- White Wood	Sq. ft	24	$	$
18	Door – Mechanical Room – Room MEG – White Wood	Sq. ft	42	$	$
19	Door Frame – Mechanical Room – Room MEG – White Wood	Sq. ft	24	$	$
20	Door – Home Economics Room – Room G3 – White Wood	Sq. ft	42	$	$
21	Door Frame- Home Economics Room – Room G3 – White Wood	Sq. ft.	24	$	$
	HOUSEHOLD HAZARDOUS WASTE				
22	Flourescent Light Bulbs		408	$	$
23	Electrical Ballasts		204	$	$
24	Mercury-containing Thermostats		5	$	$
25	Exit Signs		7	$	$
26	Water Fountains		2	$	$
REMEDIAL ACTION FINAL REPORT					
27	Project Health & Safety Plan, QAPP, and any other items necessary to finalize plan per MDNR/BVCP	Unit	1	$	$

Item Number	Description	Unit	Estimated Quantity	Unit Price	Extended Amount (Total)
28	Field Mobilization/Demobilization, Regulatory Notification and Permitting	Unit	1	$	$
29	Preparation of the Remedial Action Final Report	Unit	1	$	$
Base Bid Item Total		**$**			

Notes:

Please note that the site's Remedial Action Plan further details the materials/items to be addressed during the cleanup activities. Additionally, the Remedial Action Plan details confirmation sampling associated with the cleanup. Cost associated with the confirmation sampling should be incorporated into the rates/costs listed in the table above.

STATEMENT OF BIDDER'S QUALIFICATIONS

For the
Environmental Remediation at the
Former Mayview School Site
200 N. Forest Ave., Mayview, Missouri

(This form shall be completed and submitted with the project bid)
All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The bidder may submit any additional information he so desires.

1. Name of bidder_____

2. Permanent main office address_____

3. When organized_____

4. If a corporation, where incorporated _____

5. How many years have you been engaged in construction under your present firm name or trade name? _____

6. Experience and Qualifications. Summarize experience with similar environmental remediation projects over the last year or four projects whichever is less. Include specific details regarding previous work performed under EPA Brownfields and the Missouri B/VCP Programs. Attach abbreviated resumes for the proposed Contract Manager and Superintendent on site.

_____

7. List the more important contracts recently completed by you, stating approximate gross cost for each, and the month and year completed. _____

_____

8. Contracts on hand: (Schedule these, showing gross amount of each contract and the respective anticipated dates of completion.) _____

_____

9. Have you ever failed to complete any work awarded to you? If so, where and why?

_____

_____

10. Have you in the last five years ever been required to pay liquidated damages on any contract awarded to you? If so, where and why? _____

_____

11. Have you ever defaulted on a contract? If so, where and why? _____

_____

12. Has your firm ever engaged in litigation for the settlement of claims or disputes arising out of a construction contract? If so, give particulars. _____

_____

13. To what extent would you expect to employ subcontractors? (Subcontractor Form Required) _____

14. Give bank reference._____

15. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Mayview MO Foundation?

_____

16. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Mayview MO Foundation, in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at _____ this _____ day of _____, 20_____.

Name of Bidder _____
By _____
Title_____

State of _____

County of _____
_____, being duly sworn, deposes and says that he is _____ of
(TITLE)
_____
and that the answers to the foregoing questions and all statements therein contained are true and correct. Subscribed and sworn before me this _____ day of _____, 20_____.

_____
Notary Public My commission expires: _____

SUBCONTRACTOR DISCLOSURE FORM

Environmental Remediation
at
200 N. Forest Ave., Mayview, Missouri

(This form shall be completed and submitted with the project bid)

IF NO SUBCONTRACTORS ARE TO BE USED, CHECK HERE. ____

Sign and date _____

Use additional forms for each Subcontractor

SUBCONTRACTOR:_____

ADDRESS:
_____

PHONE:
_____

CONTACT
PERSON:_____

BID ITEMS TO BE SUBCONTRACTED

(ITEM NO., DESCRIPTION, QUANTITY, PRICE, AMOUNT)

TOTAL_____

PRIME CONTRACTOR: _____

SIGNATURE: _____

DATE: _____

(Note: Subcontractor Qualifications may be required prior to Bid Award.)

Subcontractor Approval _____ Date _____

ATTACHMENT A

Seagull Environmental Technologies, Inc.

121 NE 72nd Street
Gladstone, Missouri 64118
www.seagullenvirotech.com

January 17, 2016

Ms. Christine O'Keefe
Environmental Specialist
Missouri Department of Natural Resources
Brownfields/Voluntary Cleanup Program
Jefferson City, Missouri 65102

Subject: **Analysis of Brownfields Cleanup Alternatives**
Mayview School Site, Mayview, Missouri
Missouri Environmental Assessment Services Contract, Contract No. C312021002
Vendor No. 48120656000

Dear Ms. O'Keefe:

Seagull Environmental Technologies, Inc. (Seagull) is submitting the attached Analysis of Brownfields Cleanup Alternatives (ABCA) report for the Mayview School site in Mayview, Missouri. If you have any questions or comments, please contact the project manager at (913) 213-7718.

Sincerely,

Cosmo Canacari
Project Manager

Enclosures

ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES

MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Missouri Environmental Assessment Services Contract

Contract No. C312021002
Vendor No. 48120656000

Prepared For:

Missouri Department of Natural Resources – Brownfields/Voluntary Cleanup Section
P.O. Box 176
Jefferson City, Missouri 65102

January 17, 2016

Prepared By:

Seagull Environmental Technologies, Inc.
121 NE 72nd Street
Gladstone, Missouri 64118

CONTENTS

APPENDICES

TABLES

1.0 INTRODUCTION

Seagull Environmental Technologies, Inc. (Seagull) was tasked by the Missouri Department of Natural Resources (MDNR), under the Missouri Environmental Assessment Services contract, to complete an Analysis of Brownfields Cleanup Alternatives (ABCA) report for the Mayview School site in Mayview, Missouri. This ABCA examines alternatives for cleanup of asbestos-containing materials (ACM), lead-based paint (LBP), and items potentially containing hazardous materials, including preliminary cost estimates.

2.0 SITE LOCATION AND DESCRIPTION

The site encompasses approximately 1.63 acres and is currently comprised of two vacant buildings in Mayview, Lafayette County, Missouri. According to the Lafayette County Assessor's website, the physical address for the property is Long Road. Coordinates for the approximate center of the Mayview School site are 39.0548200 degrees north latitude and 93.8374700 degrees west longitude (see Appendix A, Figures 1 and 2). The subject property is bordered north by cropland, east by Forest Avenue, south by Long Road, and west by the former Mayview School baseball field.

The site contains two vacant buildings. The original Mayview School building was built in 1918. Two additions (both attached to the original school building) were constructed in 1948 and 1966. The Mayview School building and the additions (considered all one building) are referred to in this report as the "school building." The other building, north of the school building, was constructed in 1948 and contained the school's woodshop (referred to in this report as the "woodshop"). A third building, a small portable building (referred to in this report as the "outside bathroom"), was previously at the site. However, at the time this ABCA report was completed, the outside bathroom building had been removed from the site. The school building is primarily constructed of brick and block with some wood-framed interior portions and an asphalt roof. The woodshop is a wood-framed structure with an asphalt roof, sitting on a concrete slab. Historical information obtained for the subject property indicates that the buildings were used by the school from 1918 through 1996. The subject property is surrounded by cropland, pastures, vacant lots, and residences.

3.0 POTENTIAL CLEANUP ALTERNATIVES

The overall goal of any Brownfields cleanup action is to address environmental conditions preventing or impeding the preferred type of site redevelopment, and to do so in a manner protective of human health

and the environment. The preferred future plan for the site buildings is to renovate them for community and/or commercial uses. However, demolition is a possibility based on their structural conditions (particularly for the 1918 school building).

Brownfields cleanup alternatives were evaluated for the site to address specific environmental concerns identified in Phase I and Phase II Environmental Site Assessment (ESA) reports for the site (Seagull 2015a and 2015b). The purpose of the ABCA is to present viable cleanup alternatives based on site-specific conditions, technical feasibility, and preliminary cost evaluations.

The Phase I and II ESAs identified ACM, LBP, and items potentially containing hazardous materials associated with the school building and woodshop. Items potentially containing hazardous materials consisted of: fluorescent light bulbs and thermostats (potentially containing metals, including mercury), electrical ballasts (potentially containing polychlorinated biphenyls [PCB]), exit signs (potentially containing low-level radiation sources and metals), and items likely containing oxygen depleting substances (ODS) (water fountains, etc.).

The following sections describe Brownfields cleanup alternatives for addressing the ACM, LBP, and items potentially containing hazardous materials at the site, including a "No Action" alternative. Following the description, each alternative is evaluated in terms of its effectiveness, implementability, and cost.

The effectiveness of an alternative refers to its ability to meet the objectives of the Brownfields cleanup. Specific criteria used to assess the effectiveness of an alternative include the following:

- Overall protection of public health and the environment;
- Compliance with applicable or relevant and appropriate requirements (ARAR) and other criteria, advisories, and guidance;
- Long-term effectiveness (includes resilience to impacts associated with natural disasters, climate change, etc.); specific effects of climate change evaluated for the site were for increased/decreased temperatures and precipitation, as well as extreme weather events (e.g., storms of unusual intensity, increased frequency and intensity of localized flooding events);
- Reduction of toxicity, mobility, or volume through treatment/removal;
- Short-term effectiveness.

The implementability criteria address the technical and administrative feasibility of implementing an alternative, and the availability of various services and materials required during its implementation. Specific criteria used to assess implementability of an alternative include:

- Technical feasibility;
- Administrative feasibility;
- Availability of services and materials;
- State acceptance;
- Community acceptance.

Each alternative is evaluated to determine its estimated cost. The evaluations compare each alternative's direct capital costs, which include equipment, services, and contingency allowances. The purpose of evaluating each alternative is to determine its advantages and disadvantages relative to the other alternatives in order to identify key tradeoffs that would affect selection of the preferred alternative.

3.1 EVALUATED CONTAMINATION

Contaminants and other hazardous materials evaluated as part of this ABCA include ACM, LBP, and items potentially containing hazardous materials. The sections below discuss contaminants/materials identified in the Phase I and II ESA reports. Site photographs included as Appendix B show building materials determined to contain asbestos and LBP.

3.1.1 Asbestos-Containing Materials

During the Phase II ESA, 96 samples of building materials suspected to contain asbestos were collected for laboratory analysis. Eleven materials associated with the school building and woodshop were determined to contain asbestos. Specifically, ten materials were associated with the school building and one was associated with the woodshop. Those materials included asphalt roofing; roof flashing; roof tar; various-sized vinyl floor tile and associated mastic; window glaze; carpet mastic; chalkboard mastic; and drywall joint compound. In those materials, asbestos (chrysotile) was detected at concentrations that ranged from 2 to 15 percent (%). The U.S. Environmental Protection Agency (EPA) defines ACM as any material containing asbestos at a concentration above 1%. Of note, Seagull conducted a site visit on January 11, 2016, to confirm quantities of ACM. Based on that site visit, some of the quantities of ACM were revised from totals previously listed in the Phase II ESA.

It should be noted that asbestos was detected in drywall joint compound at 2%; however, no asbestos was detected in the drywall. Missouri regulations allow for compositing drywall systems for inspection/characterization purposes. Prior to conducting abatement of the joint compound, re-sampling of the drywall system (a composite sample of both drywall and joint compound) is recommended to

determine if the drywall system is ACM (greater than 1% asbestos), thus requiring abatement. For the purposes of this ABCA, costs to abate the joint compound are included. Table 1 summarizes the ACM identified in the Phase II ESA.

TABLE 1

ASBESTOS-CONTAINING MATERIALS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Material	Location	Estimated Quantity	Asbestos Result (%)
Roof Flashing	Chimney of Former School Woodshop	2 ft^2	15% Chrysotile
Roof Flashing	Along Roof Perimeter and at Penetrations of 1966 Addition	964 ft^2	15% Chrysotile
Multi-colored 9”x 9” Vinyl Tile/Mastic	Kitchen, Staff Lounge, Cafeteria, and Throughout 1966 Addition	5,000 ft^2	Tile – Up to 5% Chrysotile Mastic – Up to 5% Chrysotile
Window Glaze	Windows of Room at Northeast Corner of the 1966 Addition	672 LF - 12 Windows (7'x4' Each)	2% Chrysotile
Asphalt Roofing Roof Flashing Roof Tar	On Roof of 1948 Addition	10,800 ft^2	Up to 15% Chrysotile
Cream 12”x 12; Tan 9”x 9”; Black 2”x 6’; Red 1”x 2’ Vinyl Tile/Mastic Vinyl Tile/Mastic	Throughout Gymnasium, Bathrooms, Classrooms, and Hallways in 1948 Addition	8,700 ft^2	Tile – No Asbestos Present Mastic – Up to 8% Chrysotile
Roof Flashing	Along Roof Perimeter and at Penetrations of 1918 Building	270 ft^2	15% Chrysotile
Carpet Mastic	Home Economics Room in South-Central Portion of 1918 Building	580 ft^2	4% Chrysotile
Dark and Light Green 9”x 9” Vinyl Tile/Mastic	Old Cafeteria in the 1918 Building	630 ft^2	Tile – Up to 8% Chrysotile Mastic – Up to 3% Chrysotile
Chalkboard Mastic	Old Cafeteria in the 1918 Building	10 ft^2	3% Chrysotile
Joint Compound	In Office Rooms on Second Floor of the 1918 Building	1,237 ft^2	2% Chrysotile

Notes:

'	Feet
"	Inches
%	Percent
ft^2	Square feet
LF	Linear feet

3.1.2 Lead-Based Paint

The LBP inspection was completed with an x-ray fluorescence spectrometer (XRF). Paint-covered surfaces indicated by the XRF to contain lead at a concentration equal to or greater than (>) 1 milligram per square centimeter (mg/cm^2) were considered LBP. LBP was identified on structural components inside the 1918 building and 1966 addition. Those components were wooden doors and frames, a garage door and metal header, and concrete stair riser. Specifically, the wooden doors and frames (white color) were in rooms of the 1918 building, the concrete stair riser (brown color) was on the east wall of the gymnasium stage entry, and the garage door and metal header (white) were at the garage entrance on the north side of the 1966 addition. XRF readings from those areas ranged from 1.12 to greater than 5.00 mg/cm^2. The quantity of LBP was estimated to cover approximately 138 square feet (ft^2) on the metal garage door header and garage door, 16 ft^2 on the stair riser, and 264 ft^2 (totaling 418 ft^2) on the doors and door frames. The identified LBP was found to be in good (intact) to poor (chipped and flaking) condition.

TABLE 2

MATERIALS CONTAINING LEAD-BASED PAINT
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Location	Substrate	Paint Color	Estimated Quantity (ft^2)
1966 Addition			
Garage Door	Wood	White	128
Garage Door Header	Metal	White	10
Step Riser - Stage Entry East Wall	Concrete	Brown	16
1918 Building			
Door- Original Cafeteria - Room G2	Wood	White	42
Door Frame - Original Cafeteria - Room G2	Wood	White	24
Door - Science Room - Room G1	Wood	White	42
Door Frame - Science Room - Room G1	Wood	White	24
Door - Mechanical Room - Room MEG	Wood	White	42
Door Frame - Mechanical Room - Room MEG	Wood	White	24
Door - Home Economics Room - Room G3	Wood	White	42
Door Frame - Home Economics Room - Room G3	Wood	White	24

Notes:

ft^2 Square feet

3.1.3 Items Potentially Containing Hazardous Materials

A survey was completed during the Phase I ESA to quantify items/materials potentially containing hazardous materials inside the site buildings. Table 3 below summarizes the items identified inside the site buildings.

TABLE 3

ITEMS POTENTIALLY CONTAINING HAZARDOUS MATERIALS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Material	Location	Quantity
Fluorescent Bulbs	School Building	408
Electrical Ballasts	School Building	204
Mercury-containing Thermostats	School Building	5
Exit Signs	School Building	7
Water Fountains	School Building	2

3.2 EVALUATION OF CLEANUP ALTERNATIVES

Evaluation of cleanup alternatives includes two options for ACM, four options for LBP, and two options for items potentially containing hazardous materials. Evaluations for ACM, LBP, and items potentially containing hazardous materials have been developed with specific consideration to the Missouri Department of Natural Resources (MDNR) Brownfields/Voluntary Cleanup Program (BVCP) procedural requirements and Missouri Risk-Based Corrective Action (MRBCA) technical guidance. This consideration was made because cleanup projects implemented with EPA Brownfields Cleanup funding generally require participation in a state voluntary cleanup program (or equivalent). For reference, fees associated with enrollment into the MDNR BVCP include a $200 application fee and refundable oversight deposit of $5,000.

3.2.1 Asbestos-Containing Materials

For ACM, two options were evaluated: (1) no action, and (2) proper abatement.

Alternative 1: No Action

Alternative 1 (no action) would consist of leaving ACM in place at the site.

Effectiveness

This alternative would not be effective regarding renovation and/or demolition of the site buildings that contain ACM. In accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations, demolition or rehabilitation/renovation of the site buildings cannot precede proper abatement; therefore, renovation or demolition could not occur if this alternative would be selected. This alternative would also be ineffective in achieving the goal of reducing health risks.

Implementation

Implementation of this alternative is straightforward—the ACM would be left in place. Renovation or demolition of the site buildings could not be conducted prior to abatement.

Cost

This alternative would not involve any direct costs.

Alternative 2: Abatement of Asbestos-Containing Material

Alternative 2 would involve proper abatement of the ACM associated with the site buildings. Abatement would be conducted in accordance with applicable local, state, and federal regulations by a registered asbestos abatement contractor. Regulatory clearance would be obtained through successful implementation of a Remedial Action Plan (RAP) and a post-abatement inspection. Because the ACM is non-friable, the collection of clearance air samples is not required.

Two abatement options could be considered, full abatement and selective abatement. Full abatement would involve removal of all ACM at the site. Selective abatement would consist of abatement of ACM in poor condition or in areas planned to be disturbed by renovation or demolition. Other ACM (such as roofing materials) would remain in place if disturbance is not planned.

Effectiveness

If all of the identified ACM was removed, then Alternative 2 would be most effective in removing the risk to human health posed by the ACM. In addition, full abatement would allow for renovation or demolition without restrictions concerning disturbance of ACM.

If selective abatement were to occur, then restrictions (institutional controls) would apply concerning future disturbance of that ACM. For sites enrolled in the BVCP, MDNR requires an Operations and Maintenance (O&M) Plan to document existence, location, and future maintenance procedures regarding ACM left in place. In addition, the O&M Plan must be filed on the property's chain of title as an institutional control.

Implementation

Abatement would be conducted in accordance with applicable local, state, and federal regulations by a registered asbestos abatement contractor.

Cost

Estimated abatement costs were gathered from local vendors. The costs below are for full abatement of the ACM. It should be noted that if selective abatement were to occur, the site would be required to be entered into the MDNR Long-Term Stewardship Program, which includes a $15,000 fee for long-term MDNR oversight. Abatement costs per square foot (ft^2) and per window unit are provided and include removal and disposal costs. Total abatement cost for all of the ACM is estimated at $120,966. Additional costs to be considered, particularly if the site would be enrolled in the MDNR BVCP, would include preparation of technical reports (Remedial Action Plan [RAP]—$3,500, and Final Cleanup Report—$3,500). No restoration or replacement costs have been accounted for. Table 4 below summarizes abatement costs for ACM identified at the site.

TABLE 4

ACM ABATEMENT COSTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Material	Location	Estimated Quantity	Cost/Unit	Total Cost
Roof Flashing	Chimney of Former School Woodshop	2 ft^2	$4/$ft^2$	$8
Roof Flashing	Along Roof Perimeter and at Penetrations of 1966 Addition	964 ft^2	$4/$ft^2$	$3,856
9”x 9” Vinyl Tile and Mastic	Kitchen, Staff Lounge, Cafeteria, and Throughout 1966 Addition	5,000 ft^2	$4/$ft^2$	$20,000
Window Glaze	Windows of Room at Northeast Corner of the 1966 Addition	672 LF - 12 Windows (7'x4' Each)	$350/window	$4,200
Asphalt Roofing Roof Flashing Roof Tar	On Roof of 1948 Addition	10,800 ft^2	$5/$ft^2$	$54,000
Vinyl Tile Mastic (tile is located on top of mastic)	Throughout Gymnasium, Bathrooms, Classrooms, and Hallways in 1948 Addition	8,700 ft^2	$3/$ft^2$	$26,100
Roof Flashing	Along Roof Perimeter and at Penetrations of 1918 Building	270 ft^2	$4/$ft^2$	$1,080
Carpet Mastic (carpet is on top of mastic)	Home Economics Room in South-Central Portion of 1918 Building	580 ft^2	$3/$ft^2$	$1,740
9”x 9” Vinyl Tile and Mastic	Old Cafeteria in the 1918 Building	630 ft^2	$4/$ft^2$	$2,520

Material	Location	Estimated Quantity	Cost/Unit	Total Cost
Chalkboard Mastic	Old Cafeteria in the 1918 Building	10 ft^2	$4/$ft^2$	$40
Joint Compound	In Office Rooms on Second Floor of the 1918 Building	1,237 ft^2	$6/$ft^2$	$7,422
Total ACM Abatement Cost				**$120,966**

Notes:

' Foot
" Inch
ACM Asbestos-containing material
ft^2 Square feet

3.2.2 Lead-Based Paint

Four cleanup alternatives were evaluated to address LBP found on components associated with the school building. These options include: (1) no action, (2) removal by stripping, (3) removal by demolition, and (4) stabilization and encapsulation. Each approach (excluding no action) is capable of achieving clearance or restricted clearance criteria under the MDNR BVCP.

Alternative 1: No Action

Alternative 1 (no action) would consist of leaving LBP in place at the site.

Effectiveness

This alternative would not be effective regarding renovation of the site. The areas containing LBP would be restricted to ensure those materials were not disturbed. This alternative would be ineffective in achieving the goal of reduction of health risks.

Implementation

Implementation of this alternative is straightforward ─ the LBP is left in place. Renovation would have to consider the location and condition of the LBP and ensure those materials were not disturbed.

Cost

This alternative would not involve any direct costs.

Alternative 2: Lead-Based Paint Removal by Chemical Stripping

Alternative 2 includes removal of LBP using wet stripping and/or chemical stripping techniques. This is the most direct approach, because LBP is removed, and controls are not required to manage LBP left in

place. LBP would be removed and disposed of off site as special or hazardous waste. Disposal characterization testing would be required prior to disposal. In addition, successful completion would require the collection of dust-wipe samples in accordance with MDNR clearance regulations.

For this site, chemical stripping is a viable option for the structural components (step risers on stairs and metal garage door header).

Effectiveness

The LBP is permanently removed. This alternative would allow for redevelopment of the site without restrictions concerning disturbance and management of LBP.

Implementation

Abatement would be conducted in accordance with applicable state and federal regulations by registered LBP contractors. Approximately 26 ft^2 of LBP is located on the metal garage door header and concrete step risers, both associated with the school building. The complete removal of all LBP can be difficult, dependent on substrate conditions. In addition, this technique can generate a hazardous waste stream and requires careful consideration and precautions concerning worker health and safety.

Cost

Estimated stripping costs were gathered from local vendors. The costs are only for stripping the step risers and garage door header. The cost per ft^2 includes removal and disposal costs. The estimated removal cost using wet and/or chemical stripping is $25 per ft^2. Based on that estimated cost, removal of LBP (26 ft^2) would be $650. Additional costs to be considered include technical plans/reports (RAP and Final Cleanup Report) and the collection of clearance samples. Estimated costs for technical plans/reports are $3,500 for the RAP and $3,500 for the Final Cleanup Report (cost of RAP and Final Report includes consideration of all environmental issues to be addressed by cleanup activities). Cost for clearance sampling is estimated at $1,000.

Alternative 3: Lead-Based Paint Removal by Demolition

Alternative 3 includes stabilization of LBP in poor condition (chipping, flaking, etc.) and removal (by demolition) for proper disposal. In accordance with state regulations, the condition of LBP-containing surfaces should be inspected, and loose (chipped, flaking, etc.) LBP is required to be removed. The removed LBP residue should be segregated for proper disposal. All surfaces/components that contain LBP determined to be in good condition can be removed/demolished and disposed of as demolition waste.

Removal/demolition techniques are required to be conducted in a manner that does not chip, shred, mulch, or mill the LBP.

Based on discussed future use of the site, which includes renovation, this alternative is likely the most appropriate and economically feasible for the majority of LBP-containing components. For this alternative, materials containing LBP would be removed and disposed of off site as special (demolition) waste. This alternative is a direct approach, because LBP is removed, and controls are not required to manage LBP left in place when redevelopment occurs. LBP residue removed during stabilization would be disposed of as hazardous waste (if required). Disposal characterization testing would be required prior to disposal. In addition, successful completion would require the collection of dust-wipe clearance samples in accordance with MDNR clearance regulations.

For this site, removal by demolition is a viable option for the LBP-containing wood structural components associated with the school building. These components can be easily removed for demolition.

Effectiveness

The LBP is permanently removed. This alternative would allow for renovation of the site without restrictions concerning disturbance and management of LBP.

Implementation

Removal would be conducted in accordance with applicable state and federal regulations. The identified LBP-covered components would be properly removed and disposed of. Removal/demolition is required to be conducted in a manner that does not chip, shred, mulch, or mill the LBP.

Cost

Estimated removal by demolition costs were gathered from local vendors. Total cost to remove the LBP - containing components and properly dispose of them as special waste is estimated at $3,000. Additional costs to be considered include technical reports (RAP and Final Cleanup Report), the collection of clearance samples, and the installation of door coverings (plywood) to secure the building. Estimated costs for technical plans/reports are $3,500 for the RAP and $3,500 for the Final Cleanup Report (cost of RAP and Final Cleanup Report includes consideration of all environmental issues to be addressed by cleanup activities). Costs for clearance sampling is estimated at $1,000. Installation of door coverings for building security is estimated at $1,000.

Alternative 4: Lead-Based Paint Encapsulation

Alternative 4 includes encapsulation of LBP surfaces with a 20-year, durable, air- and dust-tight surface coating material. The encapsulating material would require approval by MDNR BVCP prior to use.

Encapsulation of LBP would be conducted on surfaces following proper preparation. Surface preparation would include proper removal of loose, flaking, and peeling paint and other surface contaminants so the proposed encapsulant would adhere properly. Encapsulation is conducted using standard paint application techniques (brush, roller, spraying, etc.). Encapsulation would stabilize the remaining lead-based paint. After the surfaces are encapsulated, the paint would not likely be subject to future deterioration. Minimization of dust/debris generated during this technique is required. After encapsulation and all other abatement activities conducted at the site are complete, the regulated area would be vacuumed with a high-efficiency particulate air (HEPA) filter-equipped vacuum, wiped with a cleaning solution, rinsed, and re-HEPA vacuumed.

For this site, encapsulation is not a likely option. Compared to Alternatives 2 and 3, waste generation and disposal costs would be reduced. Regulatory clearance would be obtained through a post-encapsulation inspection and the collection of dust-wipe samples in accordance with MDNR clearance regulations.

Effectiveness

Encapsulation is a relatively simple process that does not significantly alter structural conditions. This alternative would allow for redevelopment of the site; however, restrictions (institutional controls) would apply concerning future disturbance of LBP. For sites enrolled in the MDNR BVCP, MDNR requires that an O&M Plan be created to document the existence, location, and future maintenance procedures regarding the LBP. In addition, the O&M Plan is required to be filed on the property's chain of title as an institutional control. The site would also be required to be entered into the MDNR Long-Term Stewardship Program, which includes a $15,000 fee for long-term MDNR oversight.

Implementation

Encapsulation would be conducted in accordance with applicable state and federal regulations by a registered LBP contractor. Encapsulation is not a viable alternative for surfaces that are subject to impact or friction. Encapsulation requires follow-up inspections, maintenance, and potential building restrictions.

Cost

Estimated encapsulation costs were gathered from local vendors. Cost per ft^2 is provided and includes labor and materials. Estimated encapsulation cost is $15 per ft^2. Based on that estimated cost,

encapsulation of LBP on the previously identified components (418 ft^2) would be $6,270. Additional costs to be considered include technical reports (RAP, Final Cleanup Report, and O&M Plan) and the collection of clearance samples. Estimated costs for technical plans/reports are $3,500 for the RAP, $3,500 for the Final Cleanup Report, and $2,500 for the O&M Plan (cost of RAP and Final Cleanup Report includes consideration of all environmental issues to be addressed by cleanup activities). Long-Term Stewardship costs are $15,000. Cost for clearance sampling is estimated at $1,000.

3.2.3 Items Potentially Containing Hazardous Materials

For items potentially containing hazardous materials, two options were evaluated: (1) no action, and (2) proper removal for recycling or disposal.

Alternative 1: No Action

Alternative 1 (no action) would consist of leaving the identified items and materials in place at the site.

Effectiveness

This alternative would not be effective regarding renovation of the property and could pose health risks to future occupants.

Implementation

Implementation of this alternative is straightforward ─ the items potentially containing hazardous materials are left in place.

Cost

This alternative would not involve any direct costs.

Alternative 2: Removal of Items Potentially Containing Hazardous Materials

Alternative 2 would involve properly disposing/recycling of the items potentially containing hazardous materials. Typically, those materials are classified as universal waste and should be handled by a qualified waste management company.

Effectiveness

Alternative 2 would be effective in removing the items potentially containing hazardous materials.

Implementation

Disposal would be arranged by a qualified waste management company. The items would be removed for proper disposal/recycling.

Cost

Estimated disposal/recycling costs were gathered from local vendors. The estimated disposal/recycling cost for the items is $2,530. Table 5 below summarizes removal costs for items potentially containing hazardous materials.

TABLE 5

ITEMS POTENTIALLY CONTAINING HAZARDOUS MATERIALS - REMOVAL COSTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Items	Quantity	Costs Per Unit	Estimated Costs
Fluorescent Bulbs	408	$2.50	$1,020
Electrical Ballasts	204	$5.00	$1,020
Mercury-containing Thermostats	5	$30.00	$150
Exit Signs	7	$20.00	$140
Water Fountains	2	$100.00	$200
Total Estimated Removal/Disposal Cost			**$2,530**

3.3 RECOMMENDED CLEANUP ALTERNATIVES

Asbestos-Containing Material

Alternative 2 – abatement of ACM – is the recommended cleanup alternative for ACM identified at the site. Future plans at the site include renovation (and possibly demolition of the 1918 portion of the school building). Therefore, removal of all of the identified ACM would be most effective in removing the risk to human health posed by the ACM.

Lead-Based Paint

Alternatives 2 and 3 – a combination of removal by chemical stripping and removal by demolition – is the recommended cleanup alternatives for LBP identified at the site. These are the most cost effective and direct options allowing for renovation of the school building.

Items Potentially Containing Hazardous Materials

Alternative 2 – removal and disposal/recycling is the recommended cleanup alternative for the items potentially containing hazardous materials located at the site.

3.3.1 Total Cleanup Cost

Based on the recommended cleanup alternatives for ACM, LBP, and items potentially containing hazardous materials, the estimated total cleanup cost is $141,346, and includes site enrollment in the MDNR BVCP, and fees associated with preparation of required technical plans/reports. Specifically, full abatement of the ACM is estimated at $120,966 and a combination of removal of LBP by chemical stripping and demolition is estimated at $5,650 (includes $1,000 for clearance sampling). Installation of door coverings for building security is estimated at $1,000. Proper removal and disposal/recycling of the items potentially containing hazardous materials is estimated at $2,530. It should be noted, that the disposal costs provided in this report are based on the assumption that all demolition debris will be disposed of as demolition waste, excluding the segregated LBP residue. Site enrollment fees into the MDNR BVCP program are $5,200, while fees associated with preparation of technical reports would be $7,000 ($3,500 each for a RAP and Final Cleanup Report). Table 6 summarizes the discussed costs.

TABLE 6

SUMMARY OF COSTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Contaminant/Material	Recommended Alternative	Action – Cost	Total Cost
ACM	Alternative 2 – Abatement	Abatement - $120,966	$120,966
LBP	Alternatives 2 and 3 – Removal of LBP By Chemical Stripping and Demolition	Removal by Stripping - $650	$5,650
		Removal by Demolition - $3,000	
		Clearance Sampling - $1,000	
		Installation of Window/Door Coverings - Building Security - $1,000	
Hazardous Materials	Alternative 2 – Removal/Disposal	Removal - $2,530	$2,530
MDNR Brownfields/Voluntary Cleanup Program Fees			$5,200
Technical Plan Preparation (RAP and Final Cleanup Report			$7,000
Total Cost - $141,346			

Notes:

ACM	Asbestos-containing materials
LBP	Lead-based paint
MDNR	Missouri Department of Natural Resources
RAP	Remedial Action Plan

4.0 REFERENCES

Seagull Environmental Technologies Inc. (Seagull). 2015a. Phase I Environmental Site Assessment for the Mayview School Building Site. April.

Seagull Environmental Technologies Inc. (Seagull). 2015b. Phase II Environmental Site Assessment for the Mayview School Building Site. October.

APPENDIX A

FIGURES

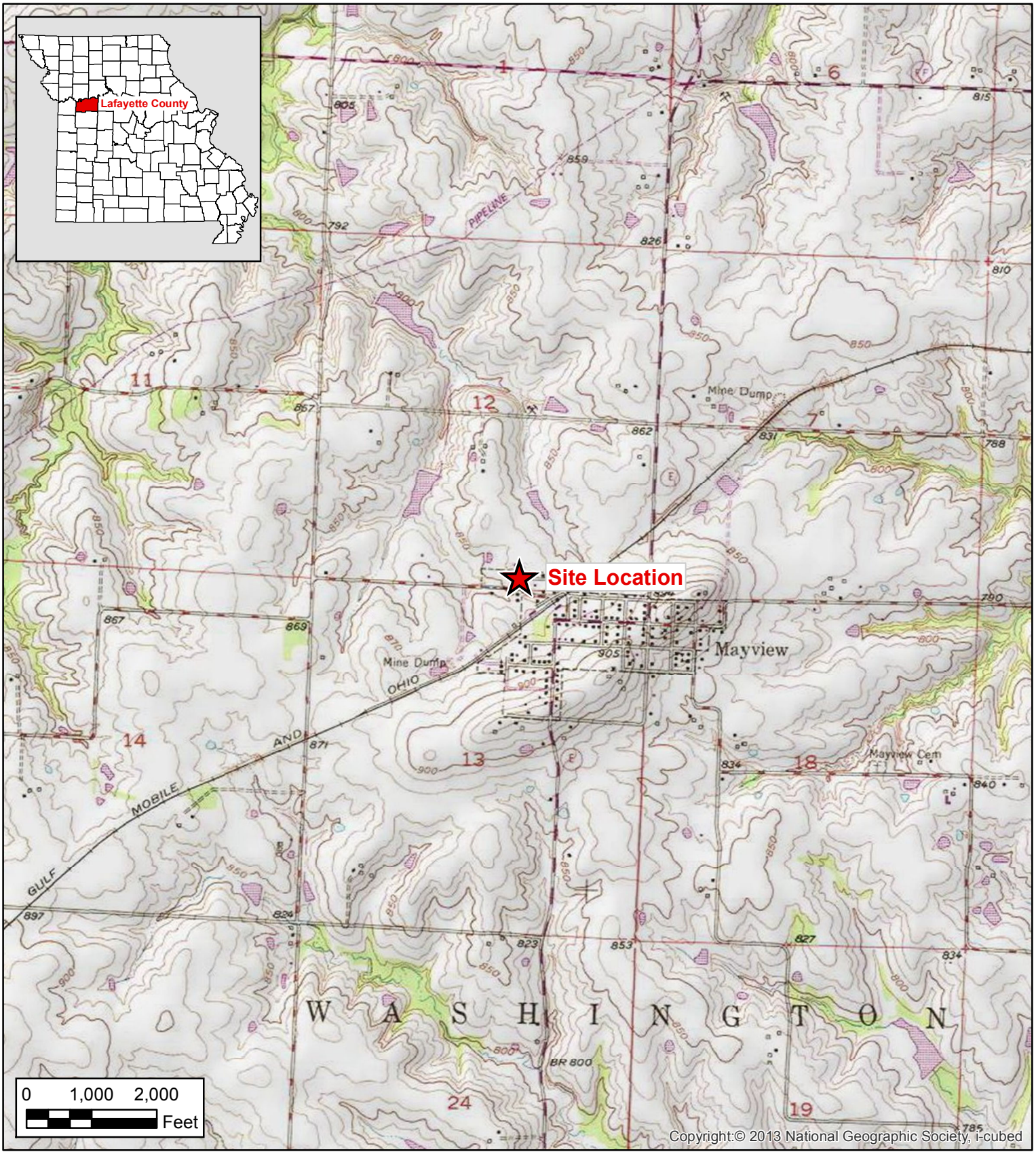

Figure 1
Site Location Map
Mayview School Site
Mayview, Missouri

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Seagull Environmental Technologies, Inc.

Source: USGS Mayview, MO 7.5 Minute Topo Quad, 1979

Date: January 2016

Project No: MOESA047EA2

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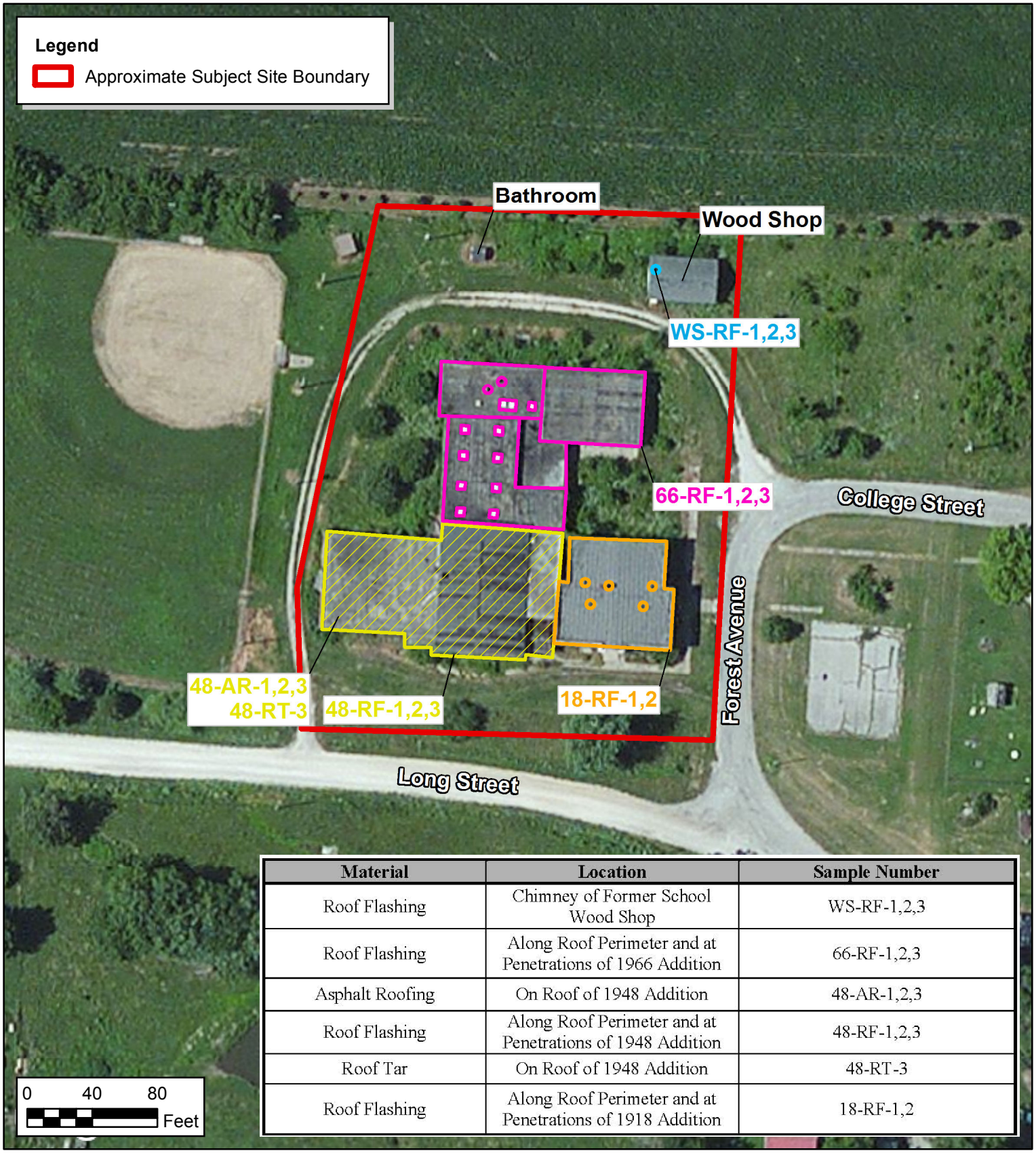

Material	Location	Sample Number
Roof Flashing	Chimney of Former School Wood Shop	WS-RF-1,2,3
Roof Flashing	Along Roof Perimeter and at Penetrations of 1966 Addition	66-RF-1,2,3
Asphalt Roofing	On Roof of 1948 Addition	48-AR-1,2,3
Roof Flashing	Along Roof Perimeter and at Penetrations of 1948 Addition	48-RF-1,2,3
Roof Tar	On Roof of 1948 Addition	48-RT-3
Roof Flashing	Along Roof Perimeter and at Penetrations of 1918 Addition	18-RF-1,2

Figure 2
Asbestos-Containing Materials Located on Roof
Mayview School Site
Mayview, Missouri

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Seagull Environmental Technologies, Inc.

Source: Bing Maps Aerial Imagery, 2012

Date: January 2016

Project No: MOESA047EA2

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Material	Location	Sample Number
Tan 9"x 9" Vinyl Tile/Mastic	Kitchen, Staff Lounge, Cafeteria, and Throughout 1966 Addition	66-FT1-1,2,3 (tile and mastic)
Brown 9"x 9" Vinyl Tile/Mastic		66-FT2-1,2,3 (tile and mastic)
Beige 9"x 9" Vinyl Tile/Mastic	Staff Lounge, Cafeteria and Throughout 1966 Addition	66-FT3-1,2,3 (tile and mastic)
Gray 9"x 9" Vinyl Tile/Mastic		66-FT4-1,2,3 (tile and mastic)
Yellow 9"x 9" Vinyl Tile/Mastic	Cafeteria and Staff Lounge in 1966 Addition	66-FT5-1,2,3 (tile and mastic)
Black 9"x 9" Vinyl Tile/Mastic		66-FT6-1,2,3 (tile and mastic)
Window Glaze	Windows of Room at Northeast Corner of the 1966 Addition	66-WG-1,2,3
Cream 12"x 12" Vinyl Tile Mastic	Throughout Gymnasium, Bathrooms, and Hallways in 1948 Addition	48-FT1-1,2 (mastic)
Black 2"x 6" Vinyl Tile/Mastic	Gymnasium in 1948 Addition	48-FT2-1,2
Red 1"x 2" Vinyl Tile/Mastic		48-FT3-1,2
Tan 9"x 9" Vinyl Tile/Mastic	Classrooms in 1948 Addition	48-FT4-1,2,3 (mastic)
Carpet Mastic	Home Economics Room in South Central Portion of 1918 Building	18-CM1-1
Dark Green 9"x 9" Vinyl Tile/Mastic	Old Cafeteria in the 1918 Building	18-FT1-1,2,3
Light Green 9"x 9" Vinyl Tile/Mastic		18-FT2-1
Chalkboard Mastic	Old Cafeteria in the 1918 Building	18-CBM-1
Joint Compound	In Office Rooms on Second Floor of the 1918 Building	18-DW-1,2,3

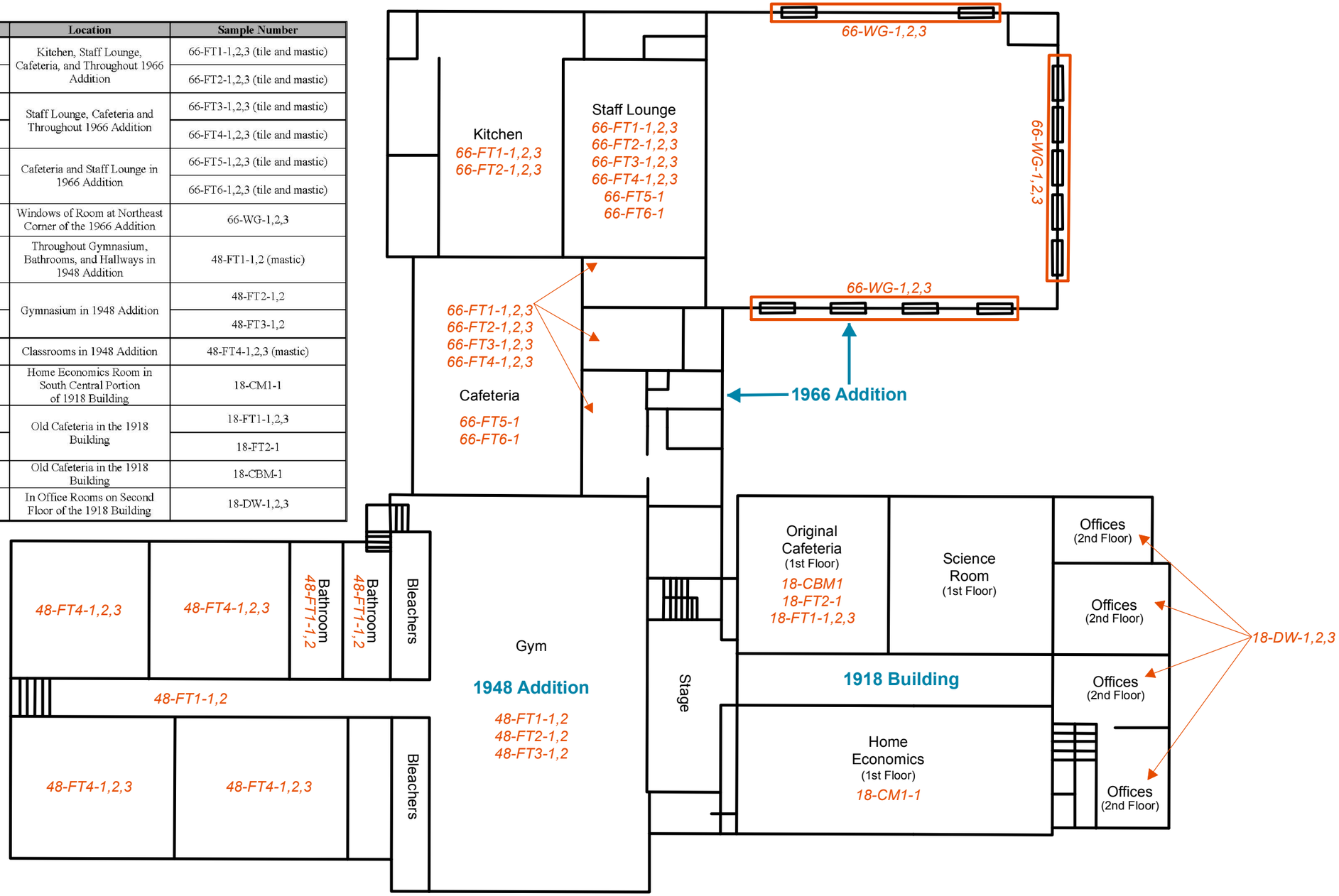

Figure 3
Asbestos-Containing Materials Location Map
Mayview School Site
Mayview, Missouri

Seagull Environmental Technologies, Inc.

Note: Drawing is not to scale

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Date: January 2016

Project No: MOESA047EA2

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APPENDIX B

SITE PHOTOGRAPHS

Client: Missouri Department of Natural Resources	Description: Photograph showing the front of the former Mayview School.	Photograph Number: 1
Direction: Northeast	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing the structure used for the former Mayview School wood shop. Asbestos was determined to be in the roof flashing around the chimney base.	Photograph Number: 2
Direction: North	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing the roof of the 1966 addition, which has roof flashing that was determined to contain asbestos.	Photograph Number: 3
Direction: West	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing part of the roof on the 1948 addition. Asphalt roofing, tar, and roof flashing samples collected from the roof of the 1948 building addition were determined to contain asbestos.	Photograph Number: 4
Direction: West	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing the roof of the 1918 building. Laboratory analysis of roof flashing samples collected from the roof were determined to contain asbestos. The roof flashing is along the roof perimeter and at penetrations.	Photograph Number: 5
Direction: South	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing tan 9- by 9-inch and brown 9- by 9-inch viny floor tile. Those tiles and associated mastic were determined to contain asbestos. They are in the kitchen, staff lounge, cafeteria, and throughout the 1966 addition.	Photograph Number: 6
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing beige, gray, black and yellow 9- by 9-inch vinyl floor tiles. All of those floor tiles were determined to contain asbestos. The mastic associated with those tiles (except for the yellow tile) were also determined to contain asbestos.	Photograph Number: 7
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing cream-colored 9- by 9-inch vinyl floor tile in the gymnasium. Mastic associated with that tile, along with black and red tile in the gymnasium were determined to contain asbestos.	Photograph Number: 8
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing tan 9- by 9-inch vinyl floor tile in the classrooms of the 1948 addition. The mastic associated with that tile was determined to contain asbestos.	Photograph Number: 9
Direction: West	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing green 9- by 9-inch vinyl floor tile in the old cafeteria of the 1918 building. That tile and a light green 9- by 9-inch vinyl floor tile and associated mastic were determined to contain asbestos.	Photograph Number: 10
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph showing the white painted surface of a garage door that was determined to contain lead-based paint (LBP).	Photograph Number: 11
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Missouri Department of Natural Resources	Description: Photograph of the metal garage door header determined to contain LBP.	Photograph Number: 12
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

ATTACHMENT B

Seagull Environmental Technologies, Inc.

121 NE 72nd Street
Gladstone, Missouri 64118
www.seagullenvirotech.com

June 7, 2018

Ms. Kristin Allan Tipton
Development Director
Environmental Improvement and Energy Resources Authority
P.O. Box 744
Jefferson City, Missouri 65102

Subject: **Remedial Action Plan**
Mayview School Site, Mayview, Missouri
Missouri Brownfields Revolving Loan Fund Support Contract

Dear Ms. Tipton:

Seagull Environmental Technologies, Inc. (Seagull) is submitting the attached Remedial Action Plan for the Mayview School site in Mayview, Missouri. If you have any questions or comments, please contact the project manager at (816) 682-4089.

Sincerely,

Brandon Jones
Environmental Scientist

Enclosures

cc: Lloyd Clouse, Mayview MO Foundation

REMEDIAL ACTION PLAN

MAYVIEW SCHOOL SITE
MAYVIEW, MISSOURI

Prepared For:

Environmental Improvement and Energy Resources Authority
P.O. Box 744
Jefferson City, Missouri 65102

June 19, 2018

Prepared By:

Seagull Environmental Technologies, Inc.
121 NE 72nd Street
Gladstone, Missouri 64118

CONTENTS

Section **Page**

CONTENTS (continued)

Section **Page**

APPENDICES

TABLES

1.0 INTRODUCTION

The Mayview MO Foundation has been awarded a Brownfields Cleanup Grant through the United States Environmental Protection Agency (EPA) and the Environmental Improvement and Energy Resources Authority (EIERA) to address contamination at a former school property on Long Road, Mayview, Missouri. Specifically, remedial activities will be conducted to address asbestos-containing materials (ACM), lead-based paint (LBP), and household hazardous waste (HHW). The Mayview MO Foundation will use these grant funds to conduct remediation design and cleanup to renovate the property and possibly demolish a portion of the school building, as described in this Remedial Action Plan (RAP).

The Mayview School site is enrolled in the Missouri Department of Natural Resources (MDNR) Brownfields/Voluntary Cleanup Program (BVCP). This RAP incorporates the MDNR BVCP Quality Assurance Project Plan (QAPP) to ensure compliance with all quality assurance/quality control (QA/QC) requirements.

In accordance with EPA Brownfields Grant requirements, this RAP implements a process of QA/QC protocols consistent with *EPA Requirements for Quality Assurance Project Plans – EPA QA/R-5* (EPA 2001).

The following sections outline proposed field, laboratory, and associated quality control procedures in detail.

1.1 SITE LOCATION AND DESCRIPTION

The site is a 1.63-acre property in Mayview, Lafayette County, Missouri. According to the Lafayette County Assessors website, the physical address for the property is Long Road. The subject property is at the northeast corner of the Long Road and Forest Avenue intersection in Mayview (see Appendix A, Figures 1 and 2). The subject property is bordered north by cropland, east by Forest Avenue, south by Long Road, and west by the former Mayview School baseball field (see Appendix A, Figure 2).

The site is included on the Mayview, Missouri, U.S. Geological Survey (USGS) 7.5-minute topographic series map (USGS 1979) (see Appendix A, Figure 1). The site is located in Block 3 of the Schowengerdt Addition, which is in Section 12, Township 49 North, and Range 27 East. Coordinates for the approximate center of the subject property are 39.0548200 degrees north latitude and 93.8374700 degrees west longitude. The parcel identification number for the site is 15-1.0-12-0-000-018.000.

The site contains two vacant buildings. The original Mayview School building was built in 1918. Two additions (both attached to the original school building) were constructed in 1948 and 1966. The Mayview School building and the additions (considered all one building) are referred to in this report as the "school building." The other building, north of the school building, was constructed in 1948 and contained the school's woodshop (referred to in this report as the "woodshop"). The school building is primarily constructed of brick and block with some wood-framed interior portions and an asphalt roof. The woodshop is a wood-framed structure with an asphalt roof, sitting on a concrete slab. Historical information obtained for the subject property indicates that the buildings were used by the school from 1918 through 1996.

1.2 PREVIOUS ASSESSMENTS

This section summarizes previous assessment reports completed for the site.

- Phase I Environmental Site Assessment (ESA) for the Mayview School Site in Mayview, Missouri. Seagull Environmental Technologies, Inc. April 30, 2015 (Seagull 2015a).
- Phase II Environmental Site Assessment (ESA) for the Mayview School Site in Mayview, Missouri. Seagull Environmental Technologies, Inc. October 8, 2015 (Seagull 2015b).
- Analysis of Brownfields Cleanup Alternatives (ABCA) for the Mayview School Site in Mayview, Missouri. Seagull Environmental Technologies, Inc. January 17, 2016 (Seagull 2016).
- Phase I Environmental Site Assessment (ESA) Update for the Mayview School Site in Mayview, Missouri. Seagull Environmental Technologies, Inc. October 6, 2017 (Seagull 2017).

The reports listed above were submitted to MDNR with the BVCP application. An asbestos and LBP inspection included in the Phase II ESA was the primary assessment conducted at the site. A summary of the findings from the asbestos and LBP inspection follows.

Asbestos-Containing Materials

During the Phase II ESA, 96 samples of building materials suspected to contain asbestos were collected for laboratory analysis. Eleven materials associated with the school building and woodshop were determined to contain asbestos. Specifically, ten materials were associated with the school building and one was associated with the woodshop. Those materials included asphalt roofing, roof flashing, roof tar, various sized vinyl floor tile and associated mastic, window glaze, carpet mastic, chalkboard mastic, and drywall joint compound. In those materials, asbestos (chrysotile) was detected at concentrations that ranged from 2 to 15 percent (%). Table 1 summarizes the ACM identified during the inspection. Analytical results for

this sampling event are found in Appendix B (Table B-1). Appendix C contains site photographs of the building components that contain ACM. EPA defines ACM as any material containing asbestos at a concentration above 1%.

It should be noted that asbestos was detected in drywall joint compound at 2%; however, no asbestos was detected in the drywall. Missouri regulations allow for compositing drywall systems for inspection/characterization purposes. Nearly all 5,000 ft^2 of the vinyl tiles in the kitchen, staff lounge, cafeteria and throughout the 1966 addition have been removed and are stored in 55-gallon drums in the school building's entry way, and requiring disposal. Asbestos containing mastic associated with 9-inch x 9-inch vinyl floor tiles remain and requires abatement.

TABLE 1

ASBESTOS-CONTAINING MATERIALS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Material	Location	Estimated Quantity	Asbestos Result (%)
Roof Flashing	Chimney of Former School Woodshop	2 ft^2	15% Chrysotile
Roof Flashing	Along roof perimeter and at penetrations of 1966 addition	964 ft^2	15% Chrysotile
Multi-colored 9"x 9" Vinyl Tile/Mastic	Kitchen, staff lounge, cafeteria, and throughout 1966 addition	5,000 ft^2 (majority in 55-gallon drums)	Tile – Up to 5% chrysotile Mastic – Up to 5% chrysotile
Window Glaze	Windows of room at northeast corner of the 1966 addition	672 lf – 12 Windows (7'x4' Each)	2% Chrysotile
Asphalt Roofing Roof Flashing Roof Tar	On roof of 1948 addition	10,800 ft^2	Up to 15% chrysotile
Cream 12"x 12"; Tan 9"x 9"; Black 2"x 6"; Red 1"x 2' Vinyl Tile/Mastic	Throughout gymnasium, bathrooms, classrooms, and hallways in 1948 addition	8,700 ft^2	Tile – No asbestos present Mastic – Up to 8% chrysotile
Roof Flashing	Along roof perimeter and at penetrations of 1918 building	270 ft^2	15% Chrysotile
Carpet Mastic	Home economics room in south-central portion of 1918 building	580 ft^2	4% Chrysotile
Dark and Light Green 9" x 9" Vinyl Tile/Mastic	Old cafeteria in the 1918 building	630 ft^2	Tile – Up to 8% chrysotile Mastic – Up to 3% chrysotile
Chalkboard Mastic	Old cafeteria in the 1918 building	10 ft^2	3% Chrysotile

Material	Location	Estimated Quantity	Asbestos Result (%)
Joint Compound	In office rooms on second floor of the 1918 building	1,237 ft^2	2% Chrysotile

Notes:

ft^2	Square feet	%	Percent
lf	Linear feet	"	Inch

Lead-Based Paint

The LBP inspection was completed with an x-ray fluorescence spectrometer (XRF). Paint-covered surfaces indicated by the XRF to contain lead at a concentration equal to or greater than (≥) 1 milligram per square centimeter (mg/cm^2) were considered LBP. LBP was identified on structural components inside the 1918 building and 1966 addition. Those components were wooden doors and frames, a garage door and metal header, and concrete step riser. Specifically, the wooden doors and frames (white color) were in rooms of the 1918 building, the concrete step riser (brown color) was on the east wall of the gymnasium stage entry, and the garage door and metal header (white) were at the garage entrance on the north side of the 1966 addition. XRF readings from those areas ranged from 1.12 to greater than 5.00 mg/cm^2. The majority of interior LBP was noted to be in good (intact) condition; however, paint on the other components was in poor (flaking) condition. Table 2 summarizes the LBP identified during the inspection report. Table B-2 in Appendix B contains a summary of all LBP screening results from the LBP inspection. Appendix C contains site photographs of the building components that contain LBP.

TABLE 2

MATERIALS CONTAINING LEAD-BASED PAINT
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Location	Substrate	Paint Color	Estimated Quantity (ft^2)
1966 Addition			
Garage Door	Wood	White	128
Garage Door Header	Metal	White	10
Step Riser – Stage Entry East Wall	Concrete	Brown	16
1918 Building			
Door- Original Cafeteria - Room G2	Wood	White	42
Door Frame - Original Cafeteria - Room G2	Wood	White	24
Door - Science Room - Room G1	Wood	White	42
Door Frame - Science Room - Room G1	Wood	White	24
Door - Mechanical Room - Room MEG	Wood	White	42
Door Frame - Mechanical Room - Room MEG	Wood	White	24

Location	Substrate	Paint Color	Estimated Quantity (ft^2)
Door - Home Economics Room - Room G3	Wood	White	42
Door Frame - Home Economics Room - Room G3	Wood	White	24

Notes:

ft^2 Square feet

Household Hazardous Waste

A HHW survey of the site buildings was completed during the inspection activities. That survey was conducted to quantify items/materials potentially containing hazardous materials located inside the buildings. That survey included, but was not limited to, the following types of materials: fluorescent light bulbs (containing mercury), electrical ballasts (potentially containing polychlorinated biphenyls [PCB]), and products containing hazardous materials (such as cleaning supplies, paint, etc.) that may need to be removed prior to redevelopment. Several fluorescent light bulbs and electrical ballasts were identified in the school building. Additionally, five mercury-containing thermostats, seven exit signs, and two water fountains were identified in the residence (Seagull 2015). Table 3 summarizes the HHW identified in the inspection report.

TABLE 3

HOUSEHOLD HAZARDOUS WASTE
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Items	Approximate Quantity
Fluorescent Light Bulbs	408
Electrical Ballasts	204
Mercury-Containing Thermostat	5
Exit Signs	7
Water Fountains	2

2.0 PROJECT ORGANIZATION

This section summarizes the project organization for the remedial action.

2.1 RESPONSIBLE AGENCY

The Mayview MO Foundation is a sub-grantee to the EIERA. MDNR is providing the primary technical review of this RAP, as the site is currently enrolled in the MDNR BVCP program.

2.2 PROJECT PERSONNEL AND SCHEDULE

Persons involved at this site and their roles and/or responsibilities are included in Table 3 below. Table 4 below outlines the tentative project schedule.

TABLE 4

PROJECT PERSONNEL
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Title	Name	Responsibilities	Phone Number
EIERA Director of Development	Kristin Allan Tipton	Overall Brownfields project management	573-751-4919
EPA Project Officer	Brad Eaton	General project coordination and programmatic oversight	913-551-7265
MDNR BVCP Project Manager	Christine O'Keefe	General project coordination and programmatic oversight, technical reviews, and approvals	573-751-7538
Mayview MO Foundation	Lloyd Clouse	General project coordination and oversight	816-737-9581
Subcontractor Personnel			
Analytical Laboratory	To be determined	Laboratory analytical procedures and reporting; laboratory quality control	To be determined
Remediation Contractor	To be determined	Conduct remedial activities, arrange disposal, and complete site restoration activities	To be determined

TABLE 5

PROJECT SCHEDULE
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Task	Anticipated Completion Timeline
MDNR review, revision, and approval of Remedial Action Plan	Determined by MDNR
Field activities completed	To be determined
Laboratory analysis completed	Within 15 days of completion of field activities
Submission of draft report	Within 45 days of completion of field activities
Report review, revision, and submission of final report	Within 10 days of EIERA approval of draft report

Notes:

EIERA Environmental Improvement and Energy Resources Authority
MDNR Missouri Department of Natural Resources

Copies of the final RAP and Remedial Action Completion Report will be distributed as indicated below.

Lloyd Clouse
c/o Mayview MO Foundation
203 S. West Street
Mayview, MO 64071

Missouri Department of Natural Resources
Brownfields / Voluntary Cleanup Program
P.O. Box 176
1738 E. Elm Street
Jefferson City, Missouri 65102
Attn: Ms. Christine O'Keefe

Environmental Improvement and Energy Resources Authority
P.O. Box 744
Jefferson City, Missouri 65102
Attn: Ms. Kristin Allan Tipton

U.S. Environmental Protection Agency
Region 7 Brownfields Program
11201 Renner Boulevard
Lenexa, Kansas 66219
Attn: Mr. Brad Eaton

3.0 PROJECT OBJECTIVES AND CLEANUP RATIONALE

The purpose of this RAP is to outline the specific field, laboratory, and quality control procedures that will be applied to address remedial activities planned for the site and ensure generation of data usable for final determinations regarding post-remediation site conditions. Through these specific efforts, BVCP cleanup requirements will also be addressed in a manner that allows for No Further Action consideration by MDNR, as addressed principally in the Missouri Risk-Based Corrective Action (MRBCA) Technical Guidance (MDNR 2006).

Further, this RAP ensures quantitative and definitive-level data will be obtained through clearance sampling, following specific QA/QC procedures. Specific activities conducted during the remedial action to achieve the project objectives include:

- Comprehensive oversight and documentation of remedial activities.
- Collection of post-cleanup clearance samples for laboratory analysis to ensure attainment of cleanup goals.
- Preparation of a Remedial Action Completion Report summarizing field activities and laboratory results.

The tasks referenced above will be supported through application of relevant Standard Operating Procedures (SOP), EPA technical guidance documents, and industry-accredited analytical methods.

3.1 PROBLEM DEFINITION AND SAMPLING OBJECTIVE

Previous assessments have determined that ACM, LBP, and HHW are present at the site. For reference, Appendix C contains photographs that show the site, as well as the areas/building components that contain asbestos and LBP. Future plans for the site involve renovation of the property and possible demolition the 1918 portion of the school building. The primary objective of the remedial action is to remove and properly dispose of hazardous materials that pose a health threat to future occupants and could impede demolition/redevelopment. Obtaining this project objective, while conducting the remedial action in accordance with BVCP cleanup requirements, should allow for unrestricted use of the property and No Further Action consideration by MDNR.

3.2 PROJECT DESCRIPTION

This remedial action will remove asbestos, LBP, and HHW that could pose a threat to future occupants. Clearance sampling will be conducted to ensure site cleanup and regulatory clearance goals have been achieved.

4.0 PROJECT QUALITY OBJECTIVES

The following sections describe the project quality objectives for the remedial action.

4.1 REVIEW AND APPROVAL ASSISTANCE

Assistance for review and approval of quality assurance documents can be deferred to the State program, with mutual agreement between EPA, the State program, and the cleanup grant recipient. The remedial action for this site is designed to be implemented under the MDNR BVCP. The site is enrolled in the MDNR BVCP.

4.2 ADOPTION OF STATE QUALITY ASSURANCE PROJECT PLAN

This RAP adopts the *MDNR Quality Assurance Project Plan for Brownfields/Voluntary Cleanup Program Sites* (see Appendix D), and incorporates a Site-Specific Quality Assurance Addendum (SSQA) to the QAPP (see Appendix E). This is allowed for environmental data collection for confirmatory sampling

following remedial activities, as described in *Section A.6.3 Remedial Action Plans/Risk Management Plans* of the MDNR QAPP.

4.2.1 Equivalency of Program Terms

The MDNR QAPP was developed using EPA guidance for Quality Assurance Project Plans. The RAP includes the MDNR QAPP (Appendix D) and Site-Specific Quality Assurance addendum (Appendix E).

4.3 DATA QUALITY OBJECTIVES

The primary data quality objective (DQO) is to provide valid data of demonstrated and documented quality to accurately verify the effectiveness of remedial activities by the collection of clearance samples and laboratory verification analyses. Quality objectives will be realized through field and laboratory methods consistent with standard industry practice, applicable EPA analytical requirements, and the specific procedures outlined herein. Data quality will be further demonstrated through Seagull and laboratory quality control reviews with regard to specific data quality indicators as discussed in the following section. This approach will allow for defensible project decisions regarding the overall degree of environmental impact and associated risk. Standard industry QA/QC protocols will be followed to ensure generation of data usable for final determinations regarding post-abatement site conditions and subsequent response action, if necessary. The MDNR QAPP and SSQA discuss QA/QC procedures in more detail. Additional details regarding specific quality control procedures are presented in Section 7.0.

4.4 DATA QUALITY INDICATORS

Laboratory data quality will be measured in terms of precision, accuracy, representativeness, completeness, comparability, and sensitivity, as defined below. Various quality control samples will be collected and analyzed to quantitatively evaluate these parameters. Associated quality control procedures are discussed in Section 7.0. Specific measurement criteria are outlined in Section B.5 of the MDNR BVCP QAPP.

Precision: A measure of reproducibility of analyses under a given set of conditions.

Accuracy: A measure of the bias that exists in a measurement system.

Representativeness: The degree to which sampling data accurately and precisely depict selected characteristics.

Completeness: The measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under "normal" conditions.

Comparability: The degree of confidence with which one data set can be compared to another.

Sensitivity: The concentrations at which the analytical technology is able to detect the presence of specific analytes (i.e., detection limits).

5.0 REMEDIAL ACTION TASKS

The sections below discuss remedial action activities planned for the site concerning ACM, LBP, and HHW.

5.1 ACM ABATEMENT ACTIVITIES

At the time this RAP was developed, a contractor had not been chosen for the abatement of ACM at the site. Seagull will ensure the abatement contractor is licensed in the State of Missouri, and meets all the required certifications. Prior to commencing any site activities, the remediation contractor will provide copies of all applicable licenses, certifications, and notifications to MDNR. Notifications will be provided to the MDNR BVCP Project Manager prior to commencing abatement activities.

General descriptions of abatement techniques to be used on ACM identified at the site are listed below. Abatement activities will follow all applicable federal, state, and local regulations. The following sections discuss abatement techniques for ACM. It should be noted, that if additional ACM (or other unknown contaminants) are discovered during the cleanup, work will stop, and actions to address the newly identified contaminants/materials will be discussed with EIERA and Mayview MO Foundation.

5.1.1 ACM Abatement Techniques

As previously discussed, ten materials were associated with the school building and one was associated with the woodshop. Those materials included asphalt roofing; roof flashing; roof tar; various sized vinyl floor tile and associated mastic; window glaze; carpet mastic; chalkboard mastic; and drywall joint compound (see Appendix A, Figures 2 and 3).

According to renovation/demolition plans, all of the ACM will be removed and properly disposed of. If thermal system insulation or surfacing materials containing asbestos be encountered, abatement of those

materials would be considered Class I removal. The general industry standard abatement techniques for removal of those materials are described below.

- A regulated area will be established. A competent person will be on site during the abatement.
- Containment (if required) will be set up in the work area and will comply with all industry standards (i.e., negative air pressure, high-efficiency particulate air [HEPA] filters, critical barriers covered, three-stage decontamination, etc.). Glove bag procedures in lieu of full containment are acceptable and may be used for TSI on ductwork.
- The ACM will be sprayed with a mist of amended water or removal encapsulate so as to saturate the material to the substrate. For glove bag use, bands holding preformed pipe insulation will be cut, and then hand-placed into a disposal bag.
- After completion of the removal work, the nearby surfaces will be cleaned with a HEPA filter vacuum or a wet rag.
- The removed material will be placed in a 6-mil poly bag for disposal, and properly labeled as contaminated waste.
- All other industry standards (wet methods, etc.) and Occupational Safety and Health Administration (OSHA), National Emission Standards for Hazardous Air Pollutants (NESHAP), state, and local regulations will be followed during the abatement.

Abatement of the asphalt roofing, roof flashing, roof tar, window glaze, carpet mastic, chalkboard mastic joint compound, and vinyl flooring (and associated mastic) is considered Class II removal. The general industry standard abatement techniques for removal of those materials are described below.

- A regulated area will be established. A competent person will be on site during the abatement. Without a negative exposure assessment in place, critical barriers will be established.
- Removal of floor tiles will proceed with attempts to remove individual tiles as complete units, thus limiting fiber release from broken tiles. Misting of the work area with water will help prevent exposure to asbestos fibers released during removal.
- The removed materials will be placed for disposal (without additional breakage) in a 6-mil poly bag, which will be properly labeled as contaminated waste.
- All other industry standards (wet methods, HEPA vacuums, etc.) and OSHA, NESHAP, state, and local regulations will be followed during the abatement.

5.1.2 ACM Clearance Sampling

The remediation contractor (licensed abatement contractor) will conduct air sampling for clearance. Clearance air samples will be collected or overseen by an Air Sampling Professional certified within the State of Missouri. Following the completion of abatement activities, the remediation contractor will conduct a visual survey to ensure no ACM remains. Because the 1918 building will be demolished

following completion of the abatement (the building will not be reoccupied), no clearance samples will be collected. The remediation contractor will conduct personal air monitoring of abatement workers, as required by OSHA.

Abatement work will include removal of asphalt roofing, roof flashing, roof tar, various sized vinyl floor tile and associated mastic, window glaze, carpet mastic, chalkboard mastic, and drywall joint compound – as described in Section 5.1.1. The ACM will be removed from the site and disposed of as both friable and non-friable asbestos-containing waste. Representative daily personal air monitoring for asbestos will be conducted during abatement, as required by OHSA's Asbestos Standard (29 CFR 1926.1101). Moreover, every worker shall have the right to know the asbestos concentrations to which he/she is exposed and what measures are in place to protect the abatement worker. Data from personal air monitoring will be used to verify effectiveness of removal engineering techniques for achieving minimal employee exposure. Area sampling may be conducted, if determined to be warranted by Seagull remediation contractor, to verify the effectiveness of established containments specifically at critical barriers. Air samples will be analyzed by Phase Contrast Microscopy (PCM), by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

Clearance activities will be conducted by the remediation contractor. Final visual and clearance sampling (when necessary) will be conducted to verify project completion. Table 6 below summarizes the number of asbestos clearance samples to be collected following abatement. The number and locations of proposed clearance samples cover the area and extent of abatement activities to be conducted inside the residential dwelling. Samples will be submitted to a National Voluntary Laboratory Accreditation Program (NVLAP)-certified laboratory (Quantem Laboratories in Oklahoma City, Oklahoma) for analysis of asbestos by PCM (NIOSH Method 7400), or by Transmission Electron Microscopy (TEM) by the EPA Asbestos Hazard Emergency Response Act (AHERA) Method.

TABLE 6

ASBESTOS ABATEMENT CLEARANCE SAMPLING
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Location	Type of ACM Removed	Number of Clearance Samples
Roof – Throughout Building 1966, 1948, 1918, and Chimney of Former School Woodshop	Roof Flashing, Asphalt Roofing, Roof Tar	7

Location	Type of ACM Removed	Number of Clearance Samples
Kitchen, Staff Lounge, Cafeteria, and Throughout 1966 Addition	Window Glaze, Vinyl Floor Tile and Associated Mastic	7
Throughout Gymnasium, Bathrooms, Classrooms, and Hallways in 1948 Addition	Vinyl Floor Tile and Associated Mastic	7
Home- Economics Room in South-Central Portion, Old Cafeteria, and Office Rooms on Second Floor of the 1918 Building	Carpet Mastic, Vinyl Floor Tile and Associated Mastic, Chalkboard Mastic, and Joint Compound	5

Notes:

Sample numbers do not include quality control samples discussed in Section 5.4.
ACM Asbestos-containing material

5.1.3 ACM Abatement Clearance Criteria

The ACM abatement will not be deemed complete until clearance sample levels are at or below 0.01 fibers per cubic centimeter (f/cc) if analyzed by PCM (NIOSH Method 7400), or 70 or fewer structures if analyzed by TEM by the EPA AHERA Method.

5.2 LEAD-BASED PAINT ABATEMENT ACTIVITIES

At the time this RAP was developed, a contractor had not been chosen for the abatement of LBP at the site. Seagull will ensure the abatement contractor is licensed in the State of Missouri, and meets all the required certifications. Prior to commencing any site activities, the remediation contractor will provide copies of all applicable licenses, certifications, and notifications to MDNR. Notifications will be provided to the MDNR BVCP Project Manager prior to commencing abatement activities. LBP was identified on components located on structural components inside the 1918 building and 1966 addition, specifically the wooden doors and frames, a garage door and metal header, and concrete step riser. LBP located inside the 1966 building will be stabilized and removed. The 1918 building is planned to be demolished as part of the cleanup, which will properly address (by removal) the LBP on its wood doors.

General descriptions of abatement techniques to be used on LBP identified at the site are described below. Abatement activities will follow all applicable federal, state, and local regulations. At the time this RAP was written, no abatement notifications had been submitted to MDNR. Notifications will be provided to the MDNR BVCP Project Manager prior to commencing abatement activities. Sections 5.2.1 and 5.2.2 discuss abatement techniques for LBP identified at the site.

5.2.1 Lead-Based Paint Stabilization/Removal

LBP-containing components associated with the school building will be removed for proper disposal during the remedial activities. This includes removal of 128 ft^2 of LBP-covered garage door. This abatement technique will involve stabilization (if required) and whole component removal.

Stabilization techniques will include scraping or HEPA vacuuming to remove LBP in poor condition (chipping, flaking, etc.) as required by state regulations. The removed LBP residue will be segregated for proper disposal (as hazardous waste). All surfaces/components that contain LBP determined to be in good condition (paint intact) will be removed as whole components and disposed of as demolition waste. During the LBP inspection conducted by Seagull in October 2015, the majority of interior LBP was noted to be in good (intact) condition; however, the paint on the other components was in poor (flaking) condition. Removal/demolition techniques are required to be conducted in a manner that does not chip, shred, mulch, or mill the LBP in order to minimize the generation and/or limit the spread of lead-containing dust/debris. For the removal of LBP-containing components, the site will be prepared by establishing regulated areas. The regulated areas will be defined to prevent unauthorized personnel from approaching closer than 20 feet from the removal operations. Applicable signage will be posted. One layer of poly sheeting will be placed on the floor/ground at the base of the work area and extend 10 feet from the work area being stabilized/removed (19 Code of State Regulations [CSR] 30.70.630, Lead Abatement Project Requirements).

After all stabilization/removal activities are complete, the regulated areas will be vacuumed (if applicable) with a HEPA-filter-equipped vacuum, wiped with a cleaning solution, rinsed, and HEPA vacuumed again (19 CSR 30.70.630, Lead Abatement Project Requirements).

The 1918 building contains approximately 264 ft^2 of LBP-covered wood doors. As previously mentioned, the 1918 building will likely be demolished following the abatement of ACM carpet mastic, vinyl tiles (and associated mastic), chalkboard mastic, and joint compound and stabilization of LBP-containing wood doors to remove LBP in poor condition (chipping, flaking, etc.).

5.2.2 Chemical Stripping of Lead-Based Paint

Chemical materials will be utilized as an abatement technique for removal of LBP from the 26ft^2 step risers on stairs and metal garage door header. The site will be prepared by establishment of regulated areas according to specifications of the following: Title 19 –Department of Health CSR for Missouri; Division 30 –Division of Health Standards, Chapter 70 Lead Abatement; and Assessment Licensing, Training and

Accreditation, Lead abatement Work Practice Standards (19CSR30.70.630). The regulated areas will be defined to prevent unauthorized personnel from approaching closer than 20 feet from the removal operation. Applicable signage will be posted. One layer of poly sheeting will be placed on the floor at the base of the LBP-containing component and extend 10 feet from the area from which removal of LBP is occurring. The LBP-containing component and the area immediately adjacent to the component will be wetted, to reduce dust. Chemical stripping of LBP is conducted using chemical solvents or caustic pastes to dissolve the LBP. The solvent or caustic paste is applied to the surface and allowed to react with the LBP. The removed LBP residue will be segregated for proper disposal (as hazardous waste). After the removal of the paint, the surface behind the removed paint will be wetted to reduce dust. All paint and residue removed during the process will be wetted and bagged for disposal in 6-mil poly sheeting and sealed. After the removal is complete, the regulated area shall be vacuumed with a HEPA-equipped vacuum, cleaned with a tri-sodium phosphate (TSP) solution, wet wiped and HEPA vacuumed, power washed, and HEPA vacuumed again (19CSR 30.70.630, Lead Abatement Project Requirements).

5.2.3 Clearance Sampling for Lead

The collection of LBP clearance samples will be conducted by a Seagull employee who is a licensed Missouri LBP inspector. Clearance sampling to be conducted following LBP abatement activities are discussed below. Where appropriate, clearance dust wipe samples will be collected according to Chapter 15 of *Housing and Urban Development (HUD) Guidelines* titled "Clearance." Sampling will be conducted in accordance with the MDNR BVCP Requirements for Lead Paint Abatement. No clearance sampling is proposed to address the demolition of the 1918 building. However, a visual clearance will be performed to ensure no lead-containing paint/residue remains on the ground surface following abatement. Table 7 below summarizes the number of lead clearance samples to be collected following abatement

Clearance for Interior Removal Activities

Following abatement activities inside the 1966 addition, a visual inspection will be performed to determine if loose paint chips or visible dust are present. If dust is present, the above-mentioned activities will be repeated. Following LBP abatement and completion of the visual inspection, final clearance sampling for dust will be conducted. Clearance sampling will involve the collection of four dust wipe samples from the 1966 addition. Specific sample locations will be determined in the field by the Seagull LBP inspector, but the samples are proposed to be collected from the floor with lead dust sampling wipes. The dust wipe samples will each be collected from a 1-ft^2 area and then transferred into a centrifuge tube (one tube per

sample). Samples will be submitted to a National Lead Laboratory Accreditation Program (NLLAP)-accredited laboratory. Table 7 below summarizes the anticipated LBP clearance sampling activities.

TABLE 7

LEAD-BASED PAINT CLEARANCE SAMPLING
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Location	Description	Approximate Number of Clearance Samples
1966 Addition- Garage	Dust Wipe Samples from Floor	2
1966 Addition- Stage Entry	Dust Wipe Samples from Floor	2

5.2.4 Lead-Based Paint Clearance Criteria

Final clearance sample results will be compared to residential standards listed in the MRBCA Technical Guidance, Appendix N, Clean-Up Levels for Surfaces and Building Interiors. Residential clearance standards are 40 micrograms of lead per square foot ($\mu g/ft^2$) for floors.

5.3 HOUSEHOLD HAZARDOUS WASTE

Remedial activities will involve properly disposing/recycling of HHW that is located inside the school building. The HHW includes 408 fluorescent light bulbs, 204 electrical ballasts, five mercury-containing thermostats, seven exit signs, and two water fountains. Those materials will be packaged and transported off site by a qualified waste management company.

5.3.1 Clearance for Household Hazardous Waste

Following the removal of the HHW, a visual survey will be completed to ensure no releases of oil, mercury, or other chemical materials have occurred (from the HHW). It is not anticipated that any sampling will be conducted related to removal/disposal of the HHW. Photographs will be taken to document post-cleanup conditions.

5.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING

To evaluate sample QC, one wipe media blank, one wipe field duplicate, one air trip blank, and one air field duplicate will be submitted for laboratory analysis during the project. The wipe samples will be

analyzed for lead and the air samples for asbestos. The collection of wipe and air field duplicates will be representative of at least 10% of the total number of samples collected for those media, which is in accordance with MDNR BVCP requirements.

5.5 LABORATORY METHODS AND SAMPLE HANDLING

Samples collected during the cleanup activities will be submitted to a NVLAP-certified laboratory for asbestos analysis and a NLLAP-certified laboratory for lead analysis. Table 8 below summarizes the analytical methods.

TABLE 8

LABORATORY METHODS AND SAMPLE CONTAINER SUMMARY
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

Laboratory Analysis	Analytical Method	Container	Holding Time
Asbestos in Air	PCM by NIOSH 7400 or TEM by AHERA Method	PCM Sample Cassette or TEM Sample Cassette	Not Applicable
Lead in Dust (Wipe Sample)	Atomic Absorption by EPA 7000B	Plastic Centrifuge Tube	180 days

Notes:

AHERA	Asbestos Hazard Emergency Response Act
NIOSH	National Institute for Occupational Safety and Health
PCM	Phase Contrast Microscopy
TEM	Transmission Electron Microscopy

Standard detection limits will be adequate for this project. Appropriate containers and physical/chemical preservation techniques will be employed during the field activities to help verify that representative analytical results are obtained. During the cleanup activities, a 24-hour turnaround time (TAT) for analysis may be requested to ensure project progress is not impeded while awaiting laboratory results.

5.6 WASTE CHARACTERIZATION AND DISPOSAL

The remediation contractor will be responsible for properly disposing of wastes generated during cleanup activities. The removed ACM will be disposed of as both friable and non-friable asbestos-containing waste. The removed LBP-containing components will be disposed of as demolition waste. Prior to the start of site cleanup activities, the remediation contractor will arrange for proper disposal of those materials, likely by obtaining a Special Waste permit at the nearest available landfill that is approved to accept the removed materials.

As previously discussed, LBP residue removed during stabilization activities will be segregated and properly disposed of, likely as hazardous waste. Based on the quantity of LBP at the site, the volume of paint residue is expected to be fully contained within a 5-gallon bucket. Paint residue will be disposed of at a facility approved to accept the waste.

During transport, removed waste will be covered. Total volume of waste disposed of at the landfill/disposal facility will be documented on weight tickets provided by the landfill or on waste manifests provided by the disposal facility. If different site conditions are encountered during the cleanup, work will stop and alternative sampling and disposal procedures will be discussed with EIERA and the Mayview MO Foundation, and changes will be implemented accordingly.

5.7 DECONTAMINATION AND INVESTIGATIVE WASTES

Sampling equipment will be cleaned and decontaminated consistently to maintain sample quality. Specifically, non-dedicated equipment that comes in contact with potentially contaminated media will not be reused prior to decontamination, which will consist of a wash with Alconox solution using a stainless steel or nylon brush, followed by a tap water rinse. Field personnel will wear disposable gloves during the decontamination process for personal protection and to prevent cross contamination.

In general, field activities will be conducted to minimize investigation-derived wastes (IDW) to the extent possible without compromising project objectives. The abatement contractors will be responsible for properly disposing of IDW generated during abatement activities.

6.0 FIELD DOCUMENTATION

This section discusses field documentation that will be maintained and recorded during project activities.

6.1 PROJECT REMEDIAL ACTION PLAN

A copy of the RAP will be maintained by Seagull and the remediation contractor at all times. Prior to field mobilization, the remediation contractor will hold a meeting to review field procedures with the project staff.

6.2 FIELD LOGBOOK

The Field Supervisor and other field personnel will document field activities in a field logbook. Field logs will be documented in ink, with any corrections crossed out and initialed. The logbook will document daily field activities in chronological order with regard to the following general procedures:

- Observed site conditions
- Sample collection information
- Problems encountered and sampling plan deviations (if any)
- Photographic descriptions
- Other information related to field procedures.

6.3 PHOTO-DOCUMENTATION

Photographs of the site activities and general field procedures will be taken to further document the remedial efforts. These records will serve to support information entered in the field logbook and visually document the remedial activities. The following information will be recorded in the field log in regard to each photograph:

- Time, date, and direction
- Subject description
- Photographer

7.0 QUALITY CONTROL

Cleanup activities will be performed consistent with the QA/QC requirements outlined in this RAP, SSQA and MDNR BVCP QAPP. EPA Region 7 and Environmental Response Team (ERT) SOPs will serve as additional guidance documents for certain field and laboratory procedures. Specific quality control measures will include the collection of blank/duplicate samples, standard chain-of-custody protocols, and standardized field and laboratory methods per this RAP and the SSQA/QAPP.

Sample data will be systematically reviewed and validated consistent with the SSQA and MDNR BVCP QAPP to further document data quality and usability. Data validation will consist of a complete review of field and laboratory methods and associated documentation relative to the approved RAP and MRBCA Technical Guidance. This process will be initiated immediately upon completion of field activities and

will be completed prior to development of the final report. At a minimum, the data validation process will address the following:

- Quality objectives and data measurement criteria
- Sampling process design
- Sampling methods
- Sample handling and custody requirements
- Quality control requirements

8.0 PROJECT SAFETY AND TRAINING

This section discusses project safety and training requirements.

8.1 SPECIAL TRAINING REQUIREMENTS/CERTIFICATION

Field personnel and others directly involved in this project will be required to read and remain familiar with this RAP. It will be the responsibility of the remediation contractor to ensure that all necessary personnel have reviewed and understand the RAP and proposed field activities.

Field staff and the selected abatement contractor will possess the appropriate OSHA training certificates, as well as state-required asbestos and LBP certifications.

8.2 HEALTH AND SAFETY PLAN

A site-specific Health and Safety Plan (HASP) will be prepared by the remediation contractor. The HASP will be submitted to the MDNR BVCP Project Manager for review prior to commencing any site activities. Field procedures will be performed consistent with the HASP to promote field safety throughout the duration of the project. Field personnel will be required to read and sign the HASP prior to performing any activities at the site. In addition, daily safety meetings will be performed every morning prior to the start of activities by the remediation contractor.

8.3 UTILITY CLEARANCE

Prior to demolition of the 1918 building, the remediation contractor will request marking of underground utility lines by contacting the Missouri One-Call system no less than 72 business hours prior to initiating field activities. Utility clearance documentation will be kept on site throughout the duration of field activities.

Additional safety precautions will address the presence of overhead utilities. Proper management and safety in and around overhead utilities is the responsibility of the remediation contractor.

9.0 PROJECT REPORTING

The remediation contractor will complete a draft Remedial Action Completion Report for review by EIERA and the Mayview MO Foundation upon completion of the field, laboratory, and data validation activities. Copies of the Final Remedial Action Completion Report will be distributed in accordance with Section 2.2. The Final Remedial Action Completion Report will include the following:

- General site description and photographic documentation
- Final clearance testing and final clearance air and wipe sampling results along with maps or drawings of sample locations
- Waste disposal documentation, such as landfill tickets
- Documentation of deviations from the RAP. Significant deviations from the RAP must have Brownfields/VCP approval prior to implementation.

10.0 ASSUMPTIONS AND WORK PLAN DEVIATIONS

This RAP assumes that site conditions will allow the proposed site activities to occur in a timely and safe manner. If site conditions will not allow activities to occur safely and as planned, or if site conditions, field observations, or field data suggest that modified strategies are warranted to achieve project goals, minor modifications may be applied at the direction of the Mayview MO Foundation/EIERA or the remediation contractor. If modified strategies are applied, these efforts will remain consistent with the QC portions of this document and the approved SSQA/QAPP. Field notes and report discussions will document any modifications to this plan. Alternative methods beyond the specified scope and intent of this RAP will not be applied prior to approval by the Mayview MO Foundation and EIERA.

11.0 REFERENCES

Missouri Department of Natural Resources (MDNR). 2006. Missouri-Risk Based Corrective Action Guidance. June.

Seagull Environmental Technologies, Inc. (Seagull).

2015a. Phase II Environmental Site Assessment (ESA) for the Mayview School Site. April 30.

2015b. Phase II Environmental Site Assessment (ESA) for the Mayview School Site. October 8.

2016. Analysis of Brownfields Cleanup Alternatives for the Mayview School Site. January 17.

2017. Phase I Environmental Site Assessment (ESA) Update for the Mayview School Site. October 6.

U.S. Environmental Protection Agency (EPA). 2001. EPA Requirements for Quality Assurance Project Plans. EPA QA/R-5. March.

U.S. Geological Survey (USGS). 1979. Mayview, Missouri, 7.5-minute Series Topographic Quadrangle Map.

APPENDIX A

FIGURES

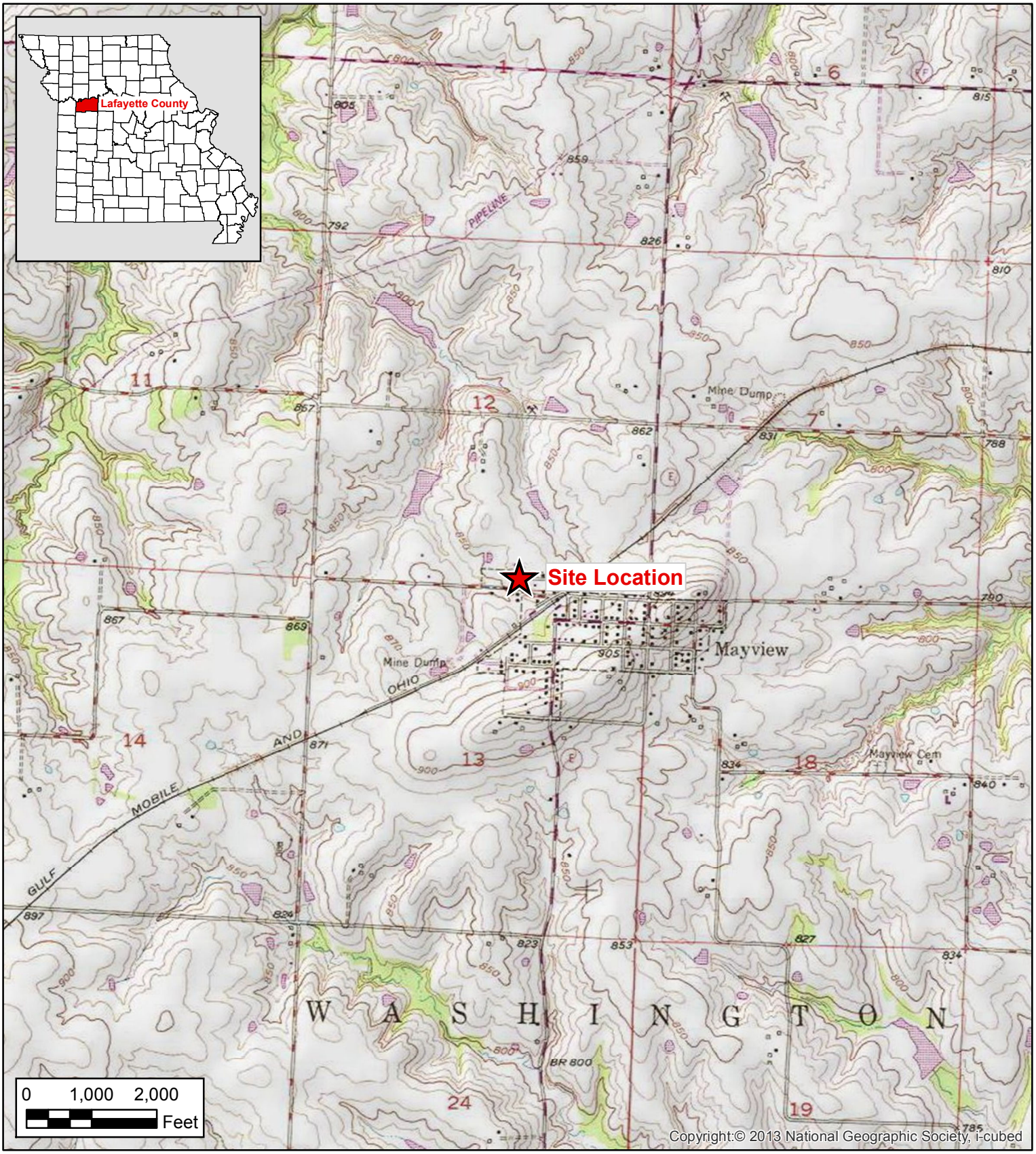

Figure 1
Site Location Map
Mayview School Site
Mayview, Missouri

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Seagull Environmental Technologies, Inc.

Source: USGS Mayview, MO 7.5 Minute Topo Quad, 1979

Date: November 2017

Project No: EIERA0016RAP

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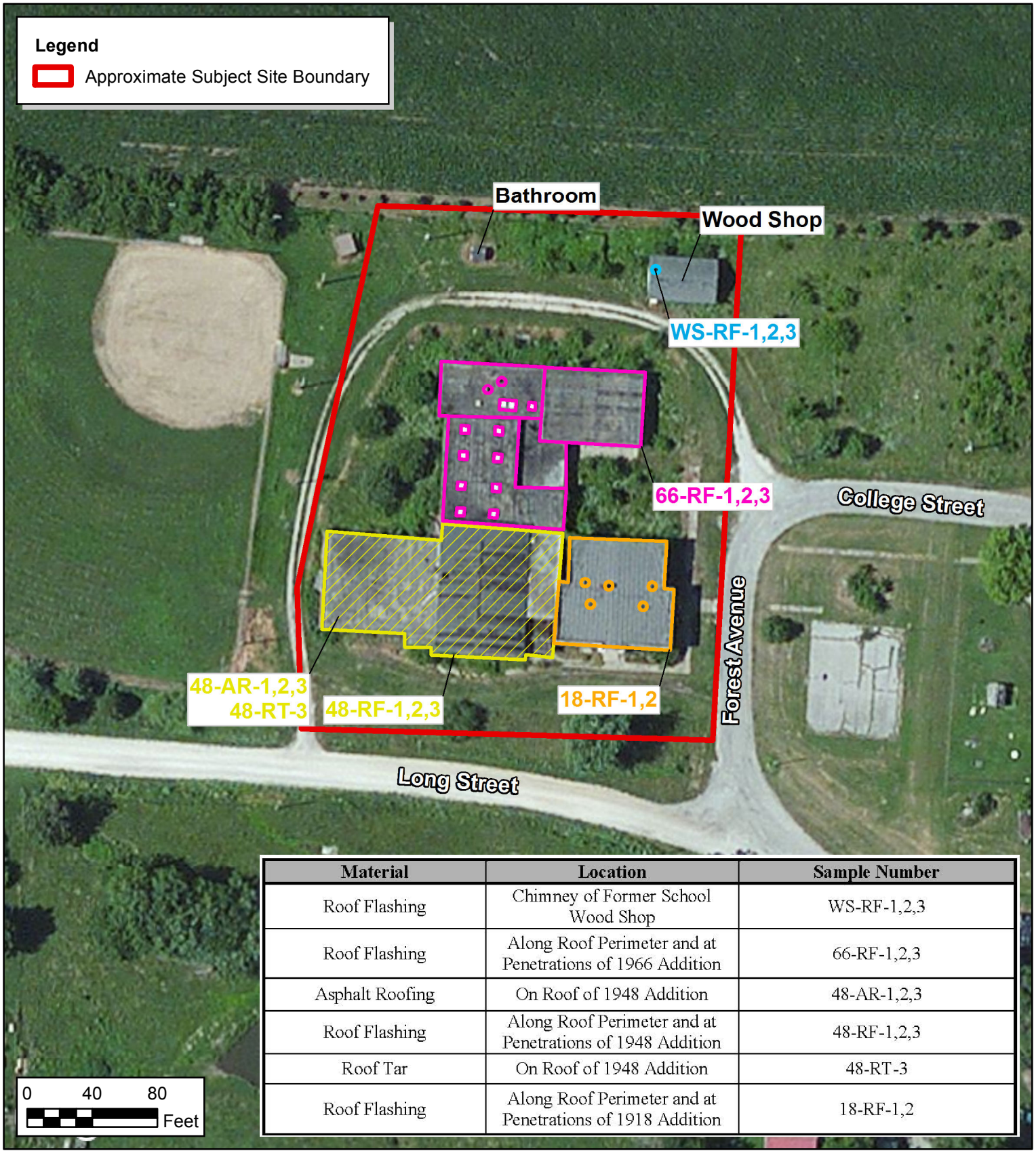

Material	Location	Sample Number
Roof Flashing	Chimney of Former School Wood Shop	WS-RF-1,2,3
Roof Flashing	Along Roof Perimeter and at Penetrations of 1966 Addition	66-RF-1,2,3
Asphalt Roofing	On Roof of 1948 Addition	48-AR-1,2,3
Roof Flashing	Along Roof Perimeter and at Penetrations of 1948 Addition	48-RF-1,2,3
Roof Tar	On Roof of 1948 Addition	48-RT-3
Roof Flashing	Along Roof Perimeter and at Penetrations of 1918 Addition	18-RF-1,2

Figure 2
Asbestos-Containing Materials Located on Roof
Mayview School Site
Mayview, Missouri

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Seagull Environmental Technologies, Inc.

Source: Bing Maps Aerial Imagery, 2012

Date: November 2017

Project No: EIERA0016RAP

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Material	Location	Sample Number
Tan 9"x 9" Vinyl Tile/Mastic	Kitchen, Staff Lounge, Cafeteria, and Throughout 1966 Addition	66-FT1-1,2,3 (tile and mastic)
Brown 9"x 9" Vinyl Tile/Mastic		66-FT2-1,2,3 (tile and mastic)
Beige 9"x 9" Vinyl Tile/Mastic	Staff Lounge, Cafeteria and Throughout 1966 Addition	66-FT3-1,2,3 (tile and mastic)
Gray 9"x 9" Vinyl Tile/Mastic		66-FT4-1,2,3 (tile and mastic)
Yellow 9"x 9" Vinyl Tile/Mastic	Cafeteria and Staff Lounge in 1966 Addition	66-FT5-1,2,3 (tile and mastic)
Black 9"x 9" Vinyl Tile/Mastic		66-FT6-1,2,3 (tile and mastic)
Window Glaze	Windows of Room at Northeast Corner of the 1966 Addition	66-WG-1,2,3
Cream 12"x 12" Vinyl Tile Mastic	Throughout Gymnasium, Bathrooms, and Hallways in 1948 Addition	48-FT1-1,2 (mastic)
Black 2"x 6" Vinyl Tile/Mastic	Gymnasium in 1948 Addition	48-FT2-1,2
Red 1"x 2" Vinyl Tile/Mastic		48-FT3-1,2
Tan 9"x 9" Vinyl Tile/Mastic	Classrooms in 1948 Addition	48-FT4-1,2,3 (mastic)
Carpet Mastic	Home Economics Room in South Central Portion of 1918 Building	18-CM1-1
Dark Green 9"x 9" Vinyl Tile/Mastic	Old Cafeteria in the 1918 Building	18-FT1-1,2,3
Light Green 9"x 9" Vinyl Tile/Mastic		18-FT2-1
Chalkboard Mastic	Old Cafeteria in the 1918 Building	18-CBM-1
Joint Compound	In Office Rooms on Second Floor of the 1918 Building	18-DW-1,2,3

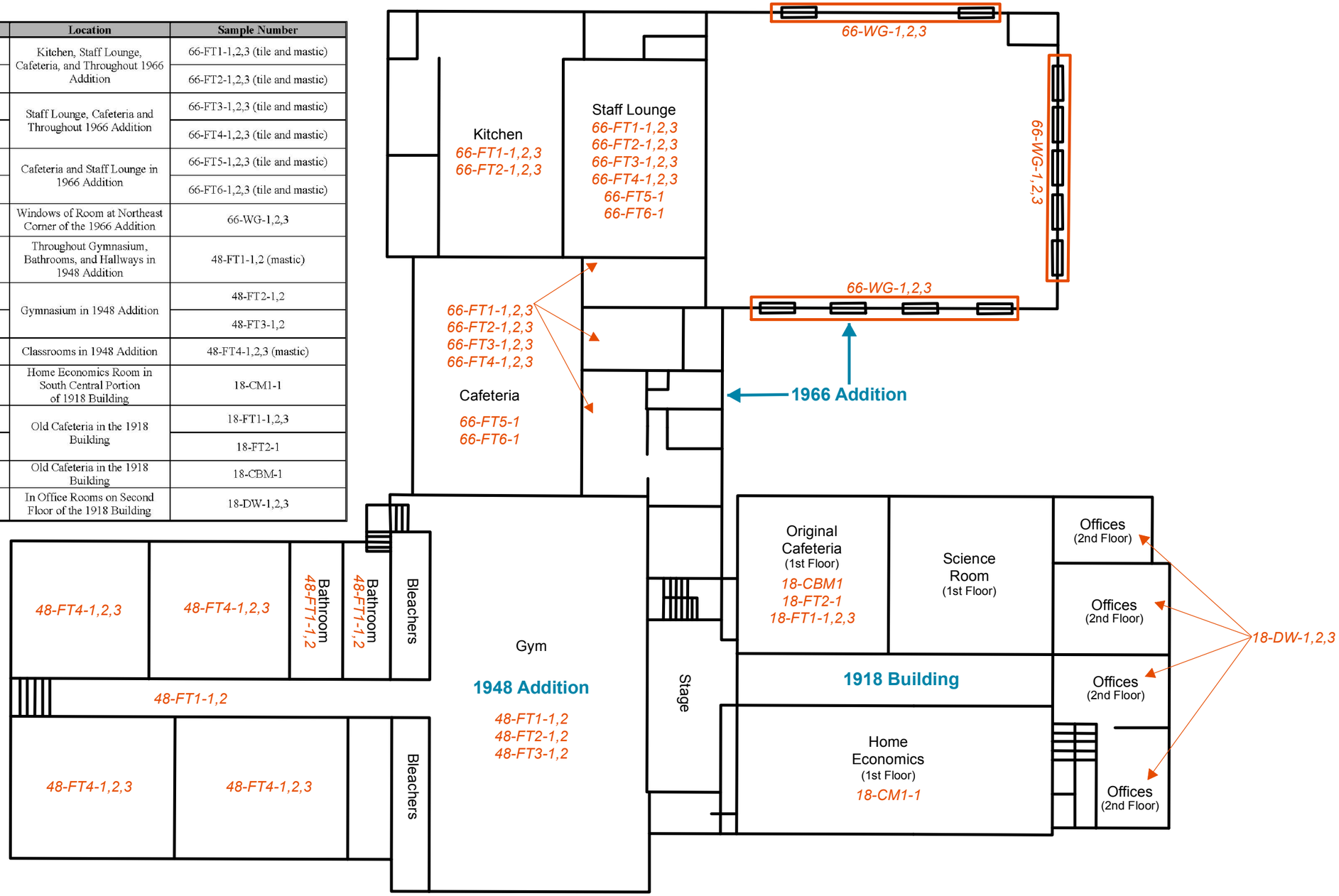

Figure 3
Asbestos-Containing Materials Location Map
Mayview School Site
Mayview, Missouri

Seagull Environmental Technologies, Inc.

Note: Drawing is not to scale

Date: November 2017

Project No: EIERA0016RAP

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APPENDIX B

ASBESTOS AND LEAD-BASED PAINT SUMMARY TABLES

TABLE B-1
ASBESTOS SAMPLE RESULTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

SAMPLE ID	MATERIAL	COLOR	SAMPLE RESULT	LOCATION	ESTIMATED QUANTITY
WS-RS-1	Shingle	Gray	Asbestos Not Present	Roof of School Wood Shop	1,512 ft^2
WS-RS-1	Tar	Black	Asbestos Not Present		
WS-RS-2	Shingle	Gray	Asbestos Not Present		
WS-RS-3	Shingle	Gray	Asbestos Not Present		
WS-RS-3	Tar	Black	Asbestos Not Present		
WS-RF-1	Roof Flashing	Black	**15% Chrysotile**	Chimney of School Wood Shop	2 ft^2
WS-RF-2	Roof Flashing	Gray	**15% Chrysotile**		
WS-RF-3	Roof Flashing	Gray	**15% Chrysotile**		
66-AR-1	Asphalt Roofing	Black	Asbestos Not Present	On Roof of 1966 Addition	9,221 ft^2
66-AR-2	Asphalt Roofing	Black	Asbestos Not Present		
66-AR-3	Asphalt Roofing	Black	Asbestos Not Present		
66-RT-1	Roof Tar	Black	Asbestos Not Present	On Roof of 1966 Addition	9,221 ft^2
66-RT-2	Roof Tar	Black	Asbestos Not Present		
66-RT-3	Roof Tar	Black	Asbestos Not Present		
66-RF-1	Roof Flashing	Gray	**15% Chrysotile**	Along Roof Perimeter and at Penetrations of 1966 Addition	964 ft^2
66-RF-2	Roof Flashing	Gray	**15% Chrysotile**		
66-RF-3	Roof Flashing	Gray	**15% Chrysotile**		
48-AR-1	Asphalt Roofing	Black	**10% Chrysotile**	On Roof of 1948 Addition	10,752 ft^2
48-AR-2	Asphalt Roofing	Black	**10% Chrysotile**		
48-AR-3	Asphalt Roofing	Black	**10% Chrysotile**		
48-RF-1	Roof Flashing	Gray	**15% Chrysotile**	Along Roof Perimeter and at Penetrations of 1948 Addition	780 ft^2
48-RF-2	Roof Flashing	Gray	**15% Chrysotile**		
48-RF-3	Roof Flashing	Silver	**10% Chrysotile**		
48-RT-1	Roof Tar	Black	Asbestos Not Present	On Roof of 1948 Addition	10,752 ft^2
48-RT-2	Roof Tar	Black	Asbestos Not Present		
48-RT-3	Roof Tar	Gray	**15% Chrysotile**		
18-AR-1	Asphalt Roofing	Black	Asbestos Not Present	On Roof of 1918 Building	3,660 ft^2
18-AR-2	Asphalt Roofing	Black	Asbestos Not Present		
18-AR-3	Asphalt Roofing	Black	Asbestos Not Present		
18-RF-1	Roof Flashing	Gray	**15% Chrysotile**	Along Roof Perimeter and at Penetrations of 1918 Building	270 ft^2
18-RF-2	Roof Flashing	Gray	**15% Chrysotile**		
18-RT-1	Roof Tar	Black	Asbestos Not Present	On Roof of 1918 Building	3,660 ft^2
18-RT-2	Roof Tar	Black	Asbestos Not Present		
18-RT-3	Roof Tar	Black	Asbestos Not Present		

TABLE B-1
ASBESTOS SAMPLE RESULTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

SAMPLE ID	MATERIAL	COLOR	SAMPLE RESULT	LOCATION	ESTIMATED QUANTITY
OB-AR-1	Asphalt Roofing	Black	Asbestos Not Present	Roof of Outside Bathroom	240 ft^2
OB-AR-2	Asphalt Roofing	Black	Asbestos Not Present		
OB-RP-1	Rppf Tar Paper	Black	Asbestos Not Present	Roof of Outside Bathroom	30 ft^2
OB-RP-2	Roof Tar Paper	Black	Asbestos Not Present		
WS-PB-1	Wall Board	Brown	Asbestos Not Present	Former Wood Shop Interior Wall Covering	1,700 ft^2
WS-PB-2	Wall Board	Brown	Asbestos Not Present		
66-CM-1	Carpet Mastic	Yellow	Asbestos Not Present	Northeast Room of 1966 Addition	1,242 ft^2
66-CM-2	Carpet Mastic	Yellow	Asbestos Not Present		
66-BM-1	Baseboard Mastic	Yellow	Asbestos Not Present	Northeast Room of 1966 Addition	200 LF
66-FT1-1	9-inch x 9-inch Vinyl Tile	Tan	**4% Chrysotile**	Kitchen, Cafeteria, and Staff Lounge in 1966 Addition	808 ft^2
66-FT1-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT1-2	9-inch x 9-inch Vinyl Tile	Tan	**4% Chrysotile**		
66-FT1-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT1-3	9-inch x 9-inch Vinyl Tile	Tan	**4% Chrysotile**		
66-FT1-3	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-BM2-1	Baseboard Mastic	Brown	Asbestos Not Present	Throughout 1966 Addition	Not Determined
66-BM2-1	Baseboard Mastic	Brown	Asbestos Not Present		
66-BM2-2	Baseboard Mastic	Brown	Asbestos Not Present		
66-FT2-1	9-inch x 9-inch Vinyl Tile	Brown	**3% Chrysotile**	Kitchen, Cafeteria, and Staff Lounge in 1966 Addition	72 ft^2
66-FT2-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT2-2	9-inch x 9-inch Vinyl Tile	Brown	**3% Chrysotile**		
66-FT2-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT2-3	9-inch x 9-inch Vinyl Tile	Brown	**3% Chrysotile**		
66-FT2-3	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT3-1	9-inch x 9-inch Vinyl Tile	Beige	**5% Chrysotile**	Staff Lounge, Cafeteria, and Throughout 1966 Addition	1,700 ft^2
66-FT3-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT3-2	9-inch x 9-inch Vinyl Tile	Beige	**5% Chrysotile**		
66-FT3-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT3-3	9-inch x 9-inch Vinyl Tile	Beige	**5% Chrysotile**		
66-FT3-3	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT4-1	9-inch x 9-inch Vinyl Tile	Gray	**5% Chrysotile**		
66-FT4-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT4-2	9-inch x 9-inch Vinyl Tile	Gray	**5% Chrysotile**		
66-FT4-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT4-3	9-inch x 9-inch Vinyl Tile	Gray	**5% Chrysotile**		
66-FT4-3	Vinyl Tile Mastic	Black	**5% Chrysotile**		

TABLE B-1
ASBESTOS SAMPLE RESULTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

SAMPLE ID	MATERIAL	COLOR	SAMPLE RESULT	LOCATION	ESTIMATED QUANTITY
66-FT5-1	9-inch x 9-inch Vinyl Tile	Yellow	**5% Chrysotile**	Cafeteria and Staff Lounge in 1966 Addition	32 ft^2
66-FT5-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-FT6-1	9-inch x 9-inch Vinyl Tile	Black	**5% Chrysotile**		128 ft^2
66-FT6-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
66-DW-1	Drywall Ceiling Tile	White	Asbestos Not Present	Kitchen in 1966 Addition	768 ft^2
66-DW-2					
66-CT-1	Ceiling Tile	White	Asbestos Not Present	Hallway and Staff Lounge in 1966 Addition	503 ft^2
66-CT-2					
66-WG-1	Window Glaze	Gray	**2% Chrysotile**	Windows of Room at Northeast Corner of the 1966 Addition	672 LF
66-WG-2					
66-WG-3					
48-FT1-1	12-inch x 12-inch Vinyl Tile	Cream	Asbestos Not Present	Throughout Gymnasium, Bathrooms, and Hallways in 1948 Addition	4,000 ft^2
48-FT1-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT1-2	12-inch x 12-inch Vinyl Tile	Cream	Asbestos Not Present		
48-FT1-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT2-1	2-inch x 6-foot Vinyl Tile	Black	Asbestos Not Present	Gymnasium in 1948 Addition	300 LF
48-FT2-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT2-2	2-inch x 6-foot Vinyl Tile	Black	Asbestos Not Present		
48-FT2-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT3-1	1-inch x 2-foot Vinyl Tile	Red	Asbestos Not Present	Gymnasium in 1948 Addition	160 LF
48-FT3-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT3-2	1-inch x 2-foot Vinyl Tile	Red	Asbestos Not Present		
48-FT3-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT4-1	12-inch x 12-inch Vinyl Tile	Tan	Asbestos Not Present	In Classrooms of 1948 Addition	2,510 ft^2
48-FT4-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT4-2	12-inch x 12-inch Vinyl Tile	Tan	Asbestos Not Present		
48-FT4-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-FT4-3	12-inch x 12-inch VinylTtile	Tan	Asbestos Not Present		
48-FT4-3	Vinyl Tile Mastic	Black	**5% Chrysotile**		
48-ST-1	16-inch x 16-inch Ceiling Tile	White	Asbestos Not Present	Above Drop Ceilings	2,500 ft^2
48-PL-1	Plaster Skim Coat	White	Asbestos Not Present	In Bathrooms of 1948 Addition	416 ft^2
48-PL-1	Plaster	Gray	Asbestos Not Present		
48-PL-2	Plaster Skim Coat	White	Asbestos Not Present		
48-PL-2	Plaster	Gray	Asbestos Not Present		
48-FT5-1	12-inch x 12-inch Vinyl Tile	Tan	Asbestos Not Present	On Gymnasium Stage	332 ft^2
48-FT5-1	Vinyl Tile Mastic	Yellow	Asbestos Not Present		

TABLE B-1
ASBESTOS SAMPLE RESULTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

SAMPLE ID	MATERIAL	COLOR	SAMPLE RESULT	LOCATION	ESTIMATED QUANTITY
48-FT5-2	12-inch x 12-inch Vinyl Tile	Tan	Asbestos Not Present	On Gymnasium Stage	332 ft^2
48-FT5-2	Vinyl Tile Mastic	Yellow	Asbestos Not Present		
48-VB-1	Vinyl Cove Base	Black	Asbestos Not Present	Throughout Building and Additions	Not Apllicable
48-VB-1	Vinyl Cove Base Mastic	Brown	Asbestos Not Present		
48-VB-2	Vinyl Cove Base	Black	Asbestos Not Present		
48-VB-2	Vinyl Cove Base Mastic	Brown	Asbestos Not Present		
18-CM-1	Carpet Mastic	Yellow/Black	**4% Chrysotile**	Home Economics Room in South-Central Portion of 1918 Building	580 ft^2
18-CM2-1	Carpet Mastic	Yellow	Asbestos Not Present	In Offices of 1918 Building	1,200 ft^2
18-CT-1	Ceiling Tile	White	Asbestos Not Present	Home Economics Room in South-Central Portion of 1918 Building	2,180 ft^2
18-FT1-1	9-inch x 9-inch Vinyl Tile	Green	**8% Chrysotile**	Old Cafeteria in the 1918 Building	600 ft^2
18-FT1-1	Vinyl Tile Mastic	Black	**5% Chrysotile**		
18-FT1-2	9-inch x 9-inch Vinyl Tile	Green	**8% Chrysotile**		
18-FT1-2	Vinyl Tile Mastic	Black	**5% Chrysotile**		
18-FT1-3	9-inch x 9-inch Vinyl Tile	Green	**8% Chrysotile**		
18-FT1-3	Vinyl Tile Mastic	Black	**5% Chrysotile**		
18-FT2-1	9-inch x 9-inch Vinyl Tile	Light Green	**6% Chrysotile**	Old Cafeteria in the 1918 Building	30 ft^2
18-FT2-1	Vinyl Tile Mastic	Black	**2% Chrysotile**		
18-CBM-1	Chalkboard Mastic	Brown	**3% Chrysotile**	Old Cafeteria in the 1918 Building	30 LF
18-PL-1	Plaster Skim Coat	White	Asbestos Not Present	Second Floor Ceilings and Walls of 1918 Building	15,897 ft^2
18-PL-1	Plaster	Gray	Asbestos Not Present		
18-PL-2	Plaster Skim Coat	White	Asbestos Not Present		
18-PL-2	Plaster	Gray	Asbestos Not Present		
18-PL-3	Plaster Skim Coat	White	Asbestos Not Present		
18-PL-3	Plaster	Gray	Asbestos Not Present		
18-VC-1	Sheet Vinyl Floor Covering	Tan	Asbestos Not Present	On Stairs and In Hallway Leading to Second Floor Offices in 1918 Building	60 ft^2
18-VC-1	Sheet Vinyl Mastic	Brown	Asbestos Not Present		
18-VC-1	Black Felt Paper	Black	Asbestos Not Present		
18-DW-1	Joint Compound	Tan	**2% Chrysotile**	In Office Rooms on Second Floor of the 1918 Building	**(1,237ft^2)** 8,250 ft^2
18-DW-1	Drywall	White	Asbestos Not Present		
18-DW-2	Joint Compound	Tan	**2% Chrysotile**		
18-DW-2	Drywall	White	Asbestos Not Present		

TABLE B-1
ASBESTOS SAMPLE RESULTS
MAYVIEW SCHOOL SITE, MAYVIEW, MISSOURI

SAMPLE ID	MATERIAL	COLOR	SAMPLE RESULT	LOCATION	ESTIMATED QUANTITY
18-DW-3	Joint Compound	Tan	**2% Chrysotile**	In Office Rooms on Second Floor of the 1918 Building	**(1,237ft^2)**
18-DW-3	Drywall	White	Asbestos Not Present		8,250 ft^2

Notes:

Bold results indicate asbestos exceeded 1%.

ID	Identification
LF	Linear foot
NA	Not applicable
ft^2	Spuare foot
%	Percent

TABLE B-2
LEAD-BASED PAINT XRF RESULTS
MAYVIEW SCHOOL SITE
MAYVIEW, MISSOURI

PROJECT NAME Mayview School Site Phase II ESA	**DATE** 08/13/15
PROJECT NUMBER MOESA036EA2	**INSPECTOR(S)** Cosmo Canacari
PROJECT LOCATION Mayview, Missouri	**BUILDING NUMBER/NAME** All Buildings

No.	Color	Room/Location	Component	Substrate	Result	Positive / Negative	Condition	Notes
1	Yellow	Wood Shop Building	Wall	Wood	0.33	Negative	Poor	
2	Green	Wood Shop Building	Wall Covering	Particle Board	0.01	Negative	Poor	
3	White	Outside Bathroom	Wall	Wood	0.01	Negative	Good	
4	White	1966 Addition	Garage Door Header	Metal	1.12	Positive	Poor	10 ft^2
5	White	1966 Addition	Garage Door	Wood	1.38	Positive	Good	128 ft^2
6	Green	1966 Addition Industrial Arts Room	East Wall	Cinder Block	0.00	Negative	NA	West wall and walls in teacher Lounge similar color
7	White	1966 Addition Industrial Arts Room	North Wall	Cinder Block	0.00	Negative	NA	South wall similar color
8	White	1966 Addition Industrial Arts Room	Wall	Cinder Block	0.00	Negative	NA	
9	White	1966 Addition Cafeteria	Wall	Cinder Block	0.00	Negative	NA	All walls are similar in color
10	White	1966 Addition Kitchen	Wall	Cinder Block	0.00	Negative	NA	
11	Green	1966 Addition Boiler Room	Door	Metal	0.00	Negative	NA	
12	Red	1966 Addition Boiler Room	Door Frame	Metal	0.00	Negative	NA	
13	Brown	Bathroom in Kitchen Area in 1966 Addition	Door Frame	Metal	0.00	Negative	NA	
14	Brown	Bathroom in Kitchen Area in 1966 Addition	Door	Wood	0.06	Negative	NA	
15	White	Entry to Cafeteria in 1966 Addition	Door Frame	Metal	0.00	Negative	NA	
16	White	Hallway in 1966 Addition	Wall	Cinder Block	0.06	Negative	NA	Similar color on walls in locker rooms, bathrooms and classrooms

TABLE B-2
LEAD-BASED PAINT XRF RESULTS
MAYVIEW SCHOOL SITE
MAYVIEW, MISSOURI

PROJECT NAME Mayview School Site Phase II ESA	**DATE** 08/13/15
PROJECT NUMBER MOESA036EA2	**INSPECTOR(S)** Cosmo Canacari
PROJECT LOCATION Mayview, Missouri	**BUILDING NUMBER/NAME** All Buildings

No.	Color	Room/Location	Component	Substrate	Result	Positive / Negative	Condition	Notes
17	Tan	Entry Door to 1966 Addition	Door	Metal	0.00	Negative	NA	
18	Tan	Entry Door to 1966 Addition	Door Frame	Metal	0.03	Negative	NA	
19	White	East Wall of Gymnasium in 1948 Addition	Wall	Cinder Block	0.00	Negative	NA	All walls in gymnasium similar color
20	White	Storage Beneath Gymnasium Stage	Drawers	Wood	0.09	Negative	NA	
21	White	Stage in Gymnasium	West Wall	Cinder Block	0.00	Negative	NA	All walls of stage in gymnasium similar color
22	Brown Stain	Stage East Wall	Step Riser	Concrete	> 1.00	Positive	Poor	16 ft^2
23	Brown Stain	Door Next to Stairway to Stage	Door	Wood	0.08	Negative	NA	
24	Brown	South Entry to 1948 Addition	Door	Metal	0.00	Negative	NA	
25	Black	South Entry to 1948 Addition	Door Frame	Metal	0.00	Negative	NA	
26	White	West Wall in South Entry Hallway	Wall	Cinder Block	0.00	Negative	NA	
27	Green	South Hallway in 1948 Addition	Wall	Cinder Block	0.04	Negative	NA	All walls in all rooms similar color
28	Brown	South Hallway in 1948 Addition	Door Frame	Wood	0.00	Negative	NA	All door and door frames similar color
29	Brown	South Hallway in 1948 Addition	Door	Wood	0.00	Negative	NA	All door and door frames similar color
30	Black	Classroom Next to South Entry Hallway	Window Frame	Metal	0.00	Negative	NA	All windows in 1948 addition similar color
31	Yellow	South Wall of Home Economic (Ec.) Room in 1918 Building	Wall	Cinder	0.30	Negative	NA	All walls similar color in Home Ec. room
32	Gray	South Entry to 1918 Building	Floor	Concrete	0.00	Negative	NA	

TABLE B-2
LEAD-BASED PAINT XRF RESULTS
MAYVIEW SCHOOL SITE
MAYVIEW, MISSOURI

PROJECT NAME Mayview School Site Phase II ESA	**DATE** 08/13/15
PROJECT NUMBER MOESA036EA2	**INSPECTOR(S)** Cosmo Canacari
PROJECT LOCATION Mayview, Missouri	**BUILDING NUMBER/NAME** All Buildings

No.	Color	Room/Location	Component	Substrate	Result	Positive / Negative	Condition	Notes
33	Yellow	East Entry to Home Ec. Room (designated G3)	Door	Wood	> 5.00	Positive	Poor	42 ft^2
34	Yellow	East Entry to Home Ec. Room (designated G3)	Door Frame	Wood	4.69	Positive	Poor	24 ft^2
35	White	1st Floor Boys Bathroom in 1918 Building	Door Frame	Wood	0.00	Negative	NA	
36	White	1st Floor Boys Bathroom East Wall in 1918 Building	Wall	Wood	0.09	Negative	NA	All wood walls similar color
37	White	1st Floor Boys Bathroom East Wall in 1918 Building	Wall	Cinder	0.22	Negative	NA	All cinder walls similar color
38	White	Original Cafeteria (designated G2) in 1918 Building	Door	Wood	> 5.00	Positive	Poor	42 ft^2
39	White	Original Cafeteria (designated G2) in 1918 Building	Door Frame	Wood	> 5.00	Positive	Poor	24 ft^2
40	White	Science Room (designated G1) in 1918 Building	Door Frame	Wood	> 5.00	Positive	Poor	24 ft^2
41	White	Science Room (designated G1) in 1918 Building	Door	Wood	> 5.00	Positive	Poor	42 ft^2
42	White	Entry to Mechanical Room (designated MEG) in 1918 Building	Door	Wood	> 5.00	Positive	Poor	42 ft^2
43	White	Entry to Mechanical Room (designated MEG) in 1918 Building	Door Frame	Wood	> 5.00	Positive	Poor	24 ft^2
44	White	Science Room (designated G1) South Wall in 1918 Building	Wall	Plaster	0.00	Negative	NA	
45	Brown	Science Room (designated G1) West Wall in 1918 Building	Wall	Wood	0.02	Negative	NA	
46	White	East Main Entry Hall	Door Frame	Wood	0.00	Negative	NA	
47	Gray	East Main Entry Hall	Stair Riser	Wood	0.00	Negative	NA	
48	Yellow	North Wall in Foyer/Hall to 2nd Floor	Wall	Plaster	0.00	Negative	NA	Walls in 2nd floor foyer same color

TABLE B-2
LEAD-BASED PAINT XRF RESULTS
MAYVIEW SCHOOL SITE
MAYVIEW, MISSOURI

PROJECT NAME Mayview School Site Phase II ESA	**DATE** 08/13/15
PROJECT NUMBER MOESA036EA2	**INSPECTOR(S)** Cosmo Canacari
PROJECT LOCATION Mayview, Missouri	**BUILDING NUMBER/NAME** All Buildings

No.	Color	Room/Location	Component	Substrate	Result	Positive / Negative	Condition	Notes
49	Brown	South Wall in Foyer to 2nd Floor	Wall	Wood Panel	0.00	Negative	NA	
50	Yellow	Room 2 South Wall on 2nd Floor (southeast corner) of 1918 Building	Wall	Plaster	0.19	Negative	NA	All walls in Room 2 similar color
51	Brown	Room 2 on 2nd Floor of 1918 Building	Door	Wood	0.00	Negative	NA	All doors in Room similar color
52	Brown	Room 2 on 2nd Floor of 1918 Building	Door Frame	Wood	0.00	Negative	NA	All door frames in Room 2 similar color
53	White	North Wall in Closet in Room 2 on 2nd Floor of 1918 Building	Wall	Plaster	0.21	Negative	NA	
54	Cream	West Wall in Room 6 on 2nd Floor in 1918 Building	Wall	Plaster	0.32	Negative	NA	Closet walls in room 6 similar color Light to room 2 closets
55	Light Brown	West Wall in Room 6 on 2nd Floor of 1918 Building	Wall	Wood Panel	0.00	Negative	NA	
56	Brown	Foyer/Hall to 2nd Floor	Floor	Wood	0.00	Negative	NA	
57	White	East Wall in Room 5 on 2nd Floor of 1918 Building	Wall	Drywall	0.20	Negative	NA	
58	White	South Wall in Room 5 on 2nd Floor of 1918 Building	Wall	Plaster	0.00	Negative	NA	
59	Brown	Entry to Room 5 on 2nd Floor of 1918 Building	Door	Wood	0.07	Negative	NA	
60	White	Entry to Room 5 on 2nd Floor of 1918 Building	Door Frame	Wood	0.00	Negative	NA	
61	Brown	South Wall in Room 3 on 2nd Floor of 1918 Building	Wall	Wood Panel	0.00	Negative	NA	Wood panel on walls in offices similar
62	White	East Office Adjacent to Room 3	Door	Wood	0.00	Negative	NA	
63	White	East Office Adjacent to Room 3	Ceiling	Plaster	0.10	Negative	NA	
64	White	Window in East Office Adjacent to Room 3	Window Frame	Wood	0.00	Negative	NA	

TABLE B-2
LEAD-BASED PAINT XRF RESULTS
MAYVIEW SCHOOL SITE
MAYVIEW, MISSOURI

PROJECT NAME Mayview School Site Phase II ESA	**DATE** 08/13/15
PROJECT NUMBER MOESA036EA2	**INSPECTOR(S)** Cosmo Canacari
PROJECT LOCATION Mayview, Missouri	**BUILDING NUMBER/NAME** All Buildings

No.	Color	Room/Location	Component	Substrate	Result	Positive / Negative	Condition	Notes
65	Gray	Window in East Office Adjacent to Room 3	Window	Metal	0.00	Negative	NA	
66	Brown	East Office Adjacent to Room 3	Wall	Wood Panel	0.00	Negative	NA	
67	Gray	Room 4 on 2nd Floor in 1918 Building	Floor	Wood	0.01	Negative	NA	

Notes:

ft^2 Square feet
NA Not applicable
XRF X-ray fluorescence

APPENDIX C

SITE PHOTOGRAPHS

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the renovated eastern wall and entrance.	Photograph Number: 1
Direction: West	Photographer: Brandon Jones	Date: 09/22/2017

Client: Evironmental Improvement and Energy Resources Authority	Description: Photograph of the original Mayview School building.	Photograph Number: 2
Direction: South	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the mini-storage building (former wood shop) at the northeast corner of the subject property.	Photograph Number: 3
Direction: North	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the baseball field adjacent to the west of the subject property.	Photograph Number: 4
Direction: West	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the room east of the cafeteria in the 1966 addition where asbestos-containing vinyl tile has been removed.	Photograph Number: 5
Direction: N/A	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the cafeteria where asbestos-containing vinyl tile has been removed.	Photograph Number: 6
Direction: Southwest	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the staff lounge where asbestos-containing vinyl tile has been removed.	Photograph Number: 7
Direction: North	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the kitchen where asbestos-containing vinyl tile has been removed.	Photograph Number: 8
Direction: North	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the northeast room in the 1966 addition.	Photograph Number: 9
Direction: East	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of 55-gallon drums containing the asbestos vinyl tiles removed from the 1966 addition.	Photograph Number: 10
Direction: South	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the roofing material removed during repair of water damage in the room adjacent to the south of the stage.	Photograph Number: 11
Direction: N/A	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the boiler room in the 1948 addition.	Photograph Number: 12
Direction: N/A	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of water damage in the gymnasium of the 1948 addition.	Photograph Number: 13
Direction: West	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the drainage trench to the west of the former school building.	Photograph Number: 14
Direction: South	Photographer: Brandon Jones	Date: 09/22/2017

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing the front of the former Mayview School.	Photograph Number: 15
Direction: Northeast	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing the structure used for the former Mayview School wood shop. Asbestos was determined to be in the roof flashing around the chimney base.	Photograph Number: 16
Direction: North	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing the roof of the 1966 addition, which has roof flashing that was determined to contain asbestos.	Photograph Number: 17
Direction: West	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing part of the roof on the 1948 addition. Asphalt roofing, tar, and roof flashing samples collected from the roof of the 1948 building addition were determined to contain asbestos.	Photograph Number: 18
Direction: West	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing the roof of the 1918 building. Laboratory analysis of roof flashing samples collected from the roof were determined to contain asbestos. The roof flashing is along the roof perimeter and at penetrations.	Photograph Number: 19
Direction: South	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing tan 9- by 9-inch and brown 9- by 9-inch viny floor tile. Those tiles and associated mastic were determined to contain asbestos. They are in the kitchen, staff lounge, cafeteria, and throughout the 1966 addition.	Photograph Number: 20
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing beige, gray, black and yellow 9- by 9-inch vinyl floor tiles. All of those floor tiles were determined to contain asbestos. The mastic associated with those tiles (except for the yellow tile) were also determined to contain asbestos.	Photograph Number: 21
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing cream-colored 9- by 9-inch vinyl floor tile in the gymnasium. Mastic associated with that tile, along with black and red tile in the gymnasium were determined to contain asbestos.	Photograph Number: 22
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing tan 9- by 9-inch vinyl floor tile in the classrooms of the 1948 addition. The mastic associated with that tile was determined to contain asbestos.	Photograph Number: 23
Direction: West	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing green 9- by 9-inch vinyl floor tile in the old cafeteria of the 1918 building. That tile and a light green 9- by 9-inch vinyl floor tile and associated mastic were determined to contain asbestos.	Photograph Number: 24
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph showing the white painted surface of a garage door that was determined to contain lead-based paint (LBP).	Photograph Number: 25
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

Client: Environmental Improvement and Energy Resources Authority	Description: Photograph of the metal garage door header determined to contain LBP.	Photograph Number: 26
Direction: N/A	Photographer: Cosmo Canacari	Date: 8/13/2015

APPENDIX D

MDNR QAPP FOR BROWNFIELDS/VOLUNTARY CLEANUP PROGRAM SITES

QUALITY ASSURANCE PROJECT PLAN FOR BROWNFIELDS/VOLUNTARY CLEANUP PROGRAM SITES

Prepared by the
Missouri Department of Natural Resources
Division of Environmental Quality
Hazardous Waste Program
Brownfields/Voluntary Cleanup Section

Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

A. PROJECT MANAGEMENT ELEMENTS

A.1 TITLE AND APPROVAL SHEET

Brownfields/Voluntary Cleanup Program
Quality Assurance Project Plan
Missouri Department of Natural Resources
Division of Environmental Quality

Site Name: _____

DEPARTMENT APPROVALS

Division Quality Assurance Manager — Date: November 13, 2014

Director, Hazardous Waste Program — Date: 11-7-14

BVCP Quality Assurance Project Officer, HWP — Date: 10/30/14

CONTRACTOR APPROVALS

Director, Contractor — Date

Project Manager, Contractor — Date

Project Field Superintendent, Contractor — Date

QA/QC Manager, Contractor — Date

A.2 TABLE OF CONTENTS

A.3 DISTRIBUTION LIST

Missouri Department of Natural Resources (MDNR)
Keith Bertels – Quality Assurance Manager, Division of Environmental Quality (DEQ)

Hazardous Waste Program (HWP)
David Lamb– HWP Director
Scott Huckstep –Brownfields/Voluntary Cleanup Program (BVCP) Section Chief and BVCP Unit Chief
Brian McCurren – BVCP Quality Assurance Project Officer
Project Managers – BVCP

Contractor/Consultant (contractor)
Director - Contractor
Project Manager–Contractor
Project Field Superintendent –Contractor
Contractor/Consultant/Laboratory – Quality Assurance Project Plan Coordinator

A.4 PROJECT/TASK ORGANIZATION

The following list identifies key individuals and organizations participating in this project, and discusses their specific roles and responsibilities as they pertain to this Quality Assurance Project Plan (QAPP).

BVCP Quality Assurance Project Officer
Responsibilities: Overall management and coordination of site-specific activities as they relate to this QAPP, including correspondence, communication and scheduling. Review plans, reports, and data to ensure that site-specific activities conducted pursuant to this QAPP meet project specific Data Quality Objectives (DQO).

Project Manager - BVCP
Responsibilities: Management and coordination of site-specific activities as they relate to this QAPP, including correspondence, communication and scheduling. Review plans, reports, and data to ensure that site-specific activities conducted pursuant to this QAPP meet project-specific DQOs.

Keith Bertels – Quality Assurance Manager, DEQ
Responsibilities: Monitors the overall Quality Assurance (QA) operations for the division. Develops and maintains the Quality Management Plan (QMP). Reviews and approves all internal QAPPs for the division.

Project Manager –Contractor
Responsibilities: Supervise and schedule field staff conducting sample collection and site assessment activities. Assures that staff are qualified and trained to perform the work, familiar with the required Standard Operating Procedures (SOP), including those related to Quality Assurance/Quality Control (QA/QC), and have the equipment necessary to perform the work. Reviews reports generated by staff for completeness, clarity and accuracy. Prepare formal reports for BVCP staff review and approval.

Project Field Superintendent - Contractor
Responsibilities: Prepare and/or implement site-specific sampling plans to collect environmental samples according to contractor SOPs at potential and/or confirmed hazardous substance sites. Conduct sample collection by appropriate methods to provide data of sufficient quality and quantity to meet project's DQOs. Prepare and/or implement health and safety plans for investigations conducted by the contractor at potential and/or confirmed hazardous substance sites. May prepare formal reports of sampling investigations for BVCP staff to evaluate.

QA/QC Manager - Contractor
Responsibilities: Reviews site-specific QAPPs and other documents as needed to ensure quality data. Performs field audits of contractor staff who conduct sampling activities in order to verify that staff are following the contractor SOPs for environmental data collection. Prepares audit reports summarizing procedures used and makes recommendations for improvement, if necessary.

Contractor/Consultant/Laboratory – QAPP Coordinator
Responsibilities: Ensures that appropriate analytical methods, Laboratory SOPs, QA/QC procedures, documentation, and training are implemented and routinely followed by all supervisory and technical staff of the contractor. Utilizes data review checklists and QC charts for both precision and accuracy data in the data quality review process. Conducts reviews of data files following review and approval by Laboratory supervisory staff.

Director - Contractor
Responsibilities: Ensures overall validation and final approval of data generated by the contractor. Assists as appropriate in the performance auditing of all activities performed by contractor personnel.

A.5 PROBLEM DEFINITION/BACKGROUND

The Brownfields/Voluntary Cleanup Program, administered by the Missouri Department of Natural Resources, Hazardous Waste Program's BVCP, provides voluntary parties with technical assistance and oversight for the investigation and cleanup of properties contaminated with hazardous substances. The goal of the BVCP is to clean up contaminated properties and bring them back into productive use.

Environmental assessments of commercial and industrial property are part of many real estate transactions and often are required by lenders and buyers as a result of the liability provisions of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or Superfund law. If contamination is found, property owners or other interested parties often want not only to clean up the property, but also to obtain a certificate of completion or "clean letter" from the state, which provides a measure of environmental liability protection. Hazardous substance contamination is not always regulated under state and federal laws such as Superfund, the Resource Conservation and Recovery Act (RCRA), or state petroleum storage tank regulations. The contamination may be of a type or concentration that does not warrant enforcement action and may not require cleanup under existing regulations. The BVCP may be

the only program with the authority to provide oversight of the cleanup and a certification of completion.

The BVCP can provide guidance so that the cleanup satisfies any applicable state and federal regulations and also provides written assurance when the project is complete. Missouri's Hazardous Substance Environmental Remediation (Voluntary Cleanup Program) Regulations (10 CSR 25-15.010) in accordance with sections 260.565 – 260.575, RSMo, provide the HWP's BVCP with the resources and the authority to provide project oversight and completion letters. Oversight costs are paid to the Department by the participant. By a memorandum of agreement with the U.S. Environmental Protection Agency (EPA), Region 7, the EPA will not pursue federal action with regard to the contamination addressed at the site once the BVCP issues a certificate of completion.

The Missouri Department of Natural Resources operates under its QMP when collecting or overseeing the collection of environmental sampling data. This plan requires that any subgrantees, contractors, or, in some cases, the regulated community, who generate environmental data develop QAPPs or other appropriate quality management tools. The QMP covers all intramural and extramural monitoring and measurement activities that generate and process environmental data for use by the department, including activities at sites participating in the BVCP.

This QAPP is generic in that it applies to several site-specific projects under the oversight of the BVCP. It is ongoing in that the projects are conducted continuously. A site-specific work plan detailing site activities will be submitted to the BVCP Project Manager for approval prior to any work conducted under the oversight of the BVCP. Any deviations from or supplemental activity to the generic QAPP will be documented in a Site-Specific Quality Assurance Project Plan Addendum (SSQA).

A.6 PROJECT/TASK DESCRIPTION

When a site enters the program, the BVCP reviews existing site assessment reports and determines whether or not additional investigation or cleanup is required to meet state standards. The site investigation and any necessary cleanup are conducted by the applicant or their consultants and contractors. Site assessment reports, remedial action plans and a final report are submitted to the BVCP for review and approval. When the BVCP is satisfied that the cleanup has met the objectives, the department provides the applicant with a Certification of Completion or "No Further Action Letter" signed by the Section Chief of BVCP. Applicants pay for the BVCP's oversight costs, which are calculated on an hourly basis. Participation in the program is voluntary and applicants may withdraw at any time.

Activities that may be conducted under this QAPP and with the oversight of the BVCP include site characterization, remedial action, and risk management. These activities will be documented through work plans for site characterization, characterization reports, risk assessment reports, remedial action plans (RAP), risk management plans (RMP), and final reports, all submitted to the BVCP for review and approval. The following include the necessary components for work plans to conduct environmental data collection submitted for BVCP approval and the necessary QA/QC documentation to be submitted after data collection.

A.6.1 Work Plans For Site Characterization

The contractor will submit the written site-specific work plan to BVCP for review and approval prior to implementation. These work plans should include a sampling and analysis plan, a field sampling plan, a health and safety plan, signature page and reference to this generic QAPP and a SSQA if applicable. The work plan will provide general site information, describe the number, type, method, and location of samples to be collected (included on a site sketch) as well as analytical parameters and methods requested for each sample.

A.6.2 Characterization Reports

The contractor will submit the written site-specific characterization report, including risk assessment reports, to the BVCP upon completion of site characterization activities. These reports should include field QA/QC documentation requirements and laboratory QA/QC documentation requirements as described in Section A.9, Documents and Records.

A.6.3 Remedial Action Plans/Risk Management Plans

If the RAP or RMP involves environmental data collection such as further site characterization, confirmatory samples following remedial activities, or monitoring, then the RAP/RMP shall be subject to this QAPP. The contractor will submit the written site-specific RAP/RMP to BVCP for review and approval prior to implementation. These plans should include a sampling and analysis plan, a field sampling plan, documentation of the health and safety plan, signature page and reference to this generic QAPP and a SSQA if applicable. The plan will provide general site information, describe the number, type, method, and location of samples to be collected (included on a site sketch) as well as analytical parameters requested for each sample.

If the RAP/RMP does not involve environmental sampling, then data QA/QC would not be a component.

A.6.4 Remedial Action/Risk Management Reports

If the RAP/RMP involves environmental sampling, then the contractor will submit to the BVCP a written site-specific report that includes field QA/QC documentation requirements and laboratory QA/QC documentation requirements as described in Section A.9, Documents and Records.

A.6.5 Modifications to the Work Plans

BVCP will have the final approval of all individual components of the written work plans revised as specified herein and reserves the right to require modifications, deletions, and or additional elaboration to the written work plans and reports as BVCP deems necessary.

A.6.5.1 BVCP requested changes

If BVCP determines that modifications to the written work plan are necessary or desired, the agency will document the requested changes to the contractor in writing. Such changes may include the need for additional sampling at the site.

Based on the written instructions provided by BVCP, the contractor will revise the written work plan.

A.6.5.2 Contractor requested changes

If the contractor determines that modifications to the written work plan are necessary, the contractor will submit a written request to BVCP for changes. The written request will include the reason for the modification and will detail the contractor's proposed changes to the written work plan. BVCP will review the written request of the contractor and send written notice of approval or disapproval of the request to the contractor.

A.6.5.3 Field Deviations from the Work Plan

Changes in site conditions between the time of the site reconnaissance and the on-site sampling visit and the visual appearance of the substance at the time of sampling may determine the actual number and locations of samples collected. The contractor should contact the BVCP Project Manager to discuss deviations or changes. The deviations or changes will be documented in the final report prepared by the contractor and submitted to the BVCP.

A.7 DATA QUALITY OBJECTIVES AND CRITERIA

DQOs are qualitative and quantitative statements derived from the Systematic Planning and DQO processes developed by EPA and further described in *Guidance on Systematic Planning Using the Data Quality Objectives Process* and *Systematic Planning: A Case Study for Hazardous Waste Site Investigations*. Data quality indicators as discussed in Section B.5 will be used to ensure quality data for sampling conducted pursuant to this QAPP.

A.7.1 Problem Statement

Properties are enrolled in BVCP for the investigation, remediation, and risk management of hazardous substances. To accomplish that, data is collected during investigation, remediation, and verification sampling activities.

The data collected will contribute to the conceptual site model (CSM), which is a functional description of the contamination problem. The CSM should be maintained and updated throughout the life of the project as information is collected. Key elements of the conceptual site model include:

- The chemical release scenario, source(s), and chemicals of concern (COCs)
- Spatial and temporal distribution of COCs in the various affected media
- Current and future land and groundwater use
- Description of any known existing or proposed land or water use restrictions
- Description of site stratigraphy, determination of the predominant vadose zone soil type, hydrogeology, meteorology, and surface water bodies that may potentially be affected by site COCs
- Remedial activities conducted to date
- An exposure model that identifies the receptors and exposure pathways under current and future land use conditions

A.7.2 Decision Statements

A.7.2.1
Do maximum concentrations of COCS exceed the Missouri-Risk Based Corrective Action (MRBCA) Default Target Levels (DTLs) or appropriate Water Quality Criteria (WQC)?

A.7.2.2
Does risk at the site exceed the allowable risk levels of a MRBCA tiered risk assessment?

A.7.2.3
Has remediation been sufficient to reduce risk to allowable levels and issue a certificate of completion?

A.7.2.4
Is risk management and long-term stewardship (LTS) necessary to issue a certificate of completion?

A.7.3 Inputs into the Decision
The inputs into the decision are any data collected as part of the activities listed in Section A.6. This data will be compared to action levels listed in the MRBCA guidance document and will be used as part of a risk assessment in accordance with the MRBCA guidance.

A.7.4 Study Boundaries
The study boundary is the legal property boundary of the site that has been enrolled in BVCP, unless hazardous substances originating on the enrolled property have migrated to adjacent properties, in which the case the study boundary is extended to include the maximum extent of that hazardous substance migration.

A.7.5 Decision Rules

A.7.5.1 Initial Characterization
- Do maximum concentrations of COCS exceed the MRBCA DTLs or appropriate WQC? If no, a certificate of completion may be issued. If yes, a Tier 1 risk assessment must be conducted.

A.7.5.2 Tier 1 Risk Assessment
- Do Tier 1 risks exceed acceptable risk levels? If no, a certificate of completion may be issued. If yes, remediate to acceptable risk levels or manage risks.
- Will risks be managed at the Tier 1 level? If no, a Tier 2 risk assessment must be conducted. If yes, develop and implement a RMP.
- If an RMP is completed and LTS is in place, a certificate of completion may be issued.

A.7.5.3 Tier 2 Risk Assessment

- Do Tier 2 risks exceed acceptable risk levels? If no, a certificate of completion may be issued. If yes, remediate to acceptable risk levels or manage risks.
- Will risks be managed at the Tier 2 level? If no, a Tier 3 risk assessment must be conducted. If yes, develop and implement an RMP.
- If an RMP is completed and LTS is in place, a certificate of completion may be issued.

A.7.5.3 Tier 3 Risk Assessment

- Do Tier 3 risks exceed acceptable risk levels? If no, a certificate of completion may be issued. If yes, remediate to acceptable risk levels or develop and implement an RMP.
- If an RMP is completed and LTS is in place, a certificate of completion may be issued.

A.7.6 Limits on Decision Error

For most projects conducted under this QAPP, the null hypothesis will be that a site is contaminated at levels that require additional investigation and remedial actions. There are two general types of decision errors:

- Type 1 Decision Error (sometimes called a false rejection error): Concluding that a site does not pose a potential threat to human health and the environment), when the site truly does pose a threat.

- Type 2 Decision Error (sometimes called a false acceptance error): Concluding that a site poses a potential threat to human health and the environment, when the site truly does not pose a threat.

The consequences of a Type 1 Decision Error, mischaracterizing a site that truly poses a threat, could have future health implications. This decision error could result in populations being exposed to unsafe levels of contaminants.

The consequences of Type 2 Decision Error, incorrectly identifying a site for further investigation and remediation, would cause the needless expenditure of resources (e.g. funding, time, sampling crew labor, and analytical costs).

When a sufficient number of samples are planned, it may be possible to assign numerical limits on tolerable decision error rates and use a statistical data analysis approach. In such cases, an error tolerance of 95% will be used unless project-specific DQOs specify otherwise. However, numerical values are typically not set when a judgmental sampling approach is used or when limited numbers of sample prevent statistical analysis. In these instances, decision errors are limited in a variety of more general ways.

The probability of making a false rejection decision error, thereby mischaracterizing a site that truly poses an unacceptable risk to human health and the environment, is limited

by several factors. Recognized Environmental Conditions (RECs) will be identified in the Phase I Environmental Site Assessment (ESA), and decision error will be limited by using judgmental sampling to target the worst-case contaminant locations by sampling RECs where the largest contaminant release would have occurred. When contaminants are detected, decision error will also be limited by comparing contaminant concentrations to the conservatively-derived target levels in the MRBCA guidance.

A.7.7 Design Optimization

For each project, contractors and BVCP will review the DQO output from Sections A.7.1 through A.7.6 together with existing environmental data for the site, and develop a sample collection design based on this review. The sample collection design will specify the type, location, frequency, analyses per sample, analytical methods, and QC samples. Rationale for the location of samples and types of analyses will be thoroughly developed and supported.

A.8 SPECIAL TRAINING/CERTIFICATION

Sample collectors are required to successfully complete a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) site safety course in accordance with 40 CFR Part 311, which references 29 CFR 1910.120. Staff are also expected to be trained on sampling for hazardous materials as well as read and be familiar with applicable SOPs, the generic QAPP, the site-specific work plan(s) and the SSQA prior to performing actual sample collection. Some sample collectors may need to be licensed inspectors for asbestos-containing material (ACM) and lead-based paint (LBP).

Specific training requirements may be necessary for personnel operating field analytical or sampling equipment or specialized equipment, such as an X-ray Fluorescence (XRF) analyzer or geophysical instruments. Manufacturer's requirements and recommendations should be followed.

The contractor will ensure and provide for the protection of the personal safety and health of all its workers on site, including the selection, provision, testing, decontamination, and disposal of all Personal Protective Equipment (PPE) and any required medical monitoring. The contractor will comply with all applicable worker safety and health laws and regulations. At all times during performance of services, the contractor will exercise reasonable professional judgment regarding safety and will use professional judgment as a criterion for cessation of services for safety reasons.

A.9 DOCUMENTS AND RECORDS

Work plans and final reports will be generated and submitted to BVCP for review and approval.

Field QA/QC documentation for site characterization reports and/or remedial action/risk management reports must consider the following details:

- Calibration and maintenance records for field instrumentation,
- Documentation of sample collection procedures,
- Reporting of any variances made in the field to sampling plans, SOPs or other applicable

guidance documents,
- Reporting of all field analysis results,
- Documentation of sample custody (provide copies of chain-of-custody documents),
- Documentation of sample preservation, handling and transportation procedures,
- Documentation of field decontamination procedures (and if applicable, collection and analysis of equipment rinsate blanks),
- Collection and analysis of all required duplicate, replicate, background and trip blank samples, and
- Documentation of disposal of investigation-derived wastes.

Laboratory QA/QC documentation for site characterization reports and/or remedial action/risk management reports must consider the following details:
- If the published analytical method used specifies QA/QC requirements within the method, those requirements must be met and the QA/QC data reported with the sample results;
- At a minimum, QA/QC samples must consist of the following items (where applicable): method/instrument blank, extraction/digestion blank, initial calibration information, initial calibration verification, continuing calibration verification, laboratory fortified blanks/laboratory control samples, duplicate, and matrix spikes/matrix spike duplicates. The site characterization and/or remedial action/risk management reports must include a discussion of data quality.
- Documentation of appropriate instrument performance data such as internal standard and surrogate recovery.

B: DATA GENERATION AND ACQUISITION

B.1 SAMPLING PROCESS DESIGN

This QAPP is generic, covering many different projects and a large number of analytes in various complex sample matrices. The sampling design will vary depending on the goal of the sampling activity, such as site characterization or confirmatory sampling. Therefore, the sampling process design will be described in detail in the site-specific work plan and/or SSQA. Some considerations when developing a plan for a sampling design, particularly a judgmental sampling design, include potential contaminant(s) and locations based on past property uses, soil properties that affect contaminant migration, physical and chemical nature of potential contaminant(s), the manner in which contaminant(s) may have been released, and timing, duration and amount of potential release(s). Since this QAPP is generic in the sense that it is intended to apply broadly to a number different specific sites, it is not possible to provide specific sampling design details. However, the following sampling design elements will be considered and discussed in the site-specific sampling plans or SSQA as describe in A.6 written for each investigation.

- Description of the design strategy, including size/volume of area to be sampled
- Type and total number of samples to be collected
- Locations of samples to be collected and rationale for selection.
- Identify anticipated sources of variability in the data and how it will be controlled.

All QC samples will be collected in accordance with EPA guidance and described in the site-specific work plan and/or SSQA. All QC samples will be documented in the sampling report. See Section B.5 for more information on QC samples.

B.2 SAMPLING METHODS

The field investigations and sample collection activities under the project will adhere to applicable SOPs and available EPA guidance and will be described in the site-specific work plan and/or SSQA. The site-specific work plan will indicate the location, type, number and media of the samples.

Manufacturer's specifications and operational instructions, other agency SOPs, other methods, instructions, including professional or scientific technical standards, may also be used for specific field analytical equipment, geophysical equipment, surveying instruments, etc. with no existing SOPs or EPA guidance upon approval of the BVCP Project Manager. The site-specific work plan will specify sampling methodologies and procedures used.

B.3 SAMPLE HANDLING AND CUSTODY

Sample handling and custody will be accomplished according to SOPs and using standard forms developed by contractor's laboratories. Sample container selection will be according to appropriate method guidance and/or SOPs. The site-specific work plan will specify sample handling procedures, sample containers, preservation, holding times, chain-of-custody and field documentation, handling of samples in the field, and transport of samples to the laboratory. All analyses will be conducted within the method-specified maximum sample holding time limits. Any data obtained from analyses conducted on samples after the specified holding time limit will be qualified by the laboratory in sample result documentation and discussed in the sampling report.

B.4 ANALYTICAL METHODS

Field analytical measurements will be according to SOPs and manufacturer's operational instructions, such as immunoassay kit instructions, photoionization detector (PID) instructions, XRF manual, etc. Calibration and other QA/QC actions will be accomplished according to SOPs, manufacturer's minimum recommendations/requirements and other appropriate scientific or technical standards. Appropriate EPA guidance, SOPs, best professional judgment and accepted industry and scientific practices will be used when correlating field analytical data to laboratory data.

Laboratory measurements will be performed by the selected laboratory according to the method requested, generally according to container, preparation, and analytical methods specified by EPA SW-846 Solid Waste Test Methods. The QC procedures specified in these methods must be followed. The detection limits of the selected analytical methods generally will be able to achieve the concentrations of interest needed. Analytical parameters will vary by project; therefore, the analytical methods used for the parameters of concern should be specified in the site-specific work plan and/or SSQA. Analytical results obtained for projects conducted under this QAPP will be compared to the Department's MRBCA Guidance. Ideally, the laboratory reporting limits would be at or below the MRBCA target levels in each environmental media. However, these risk-based levels do not take into account analytical feasibility. Even using the

best available measurement technology, laboratory-reporting limits will exceed benchmarks for some analytes in some environmental media. There may be special circumstances where a higher level of sensitivity for some analytes will be required. Data that do not meet the laboratory reporting limits will be qualified as described in the applicable verification/validation procedure, and documented in the project report.

Any non-standard analytical methods, along with associated validation procedures, should be specified in the site-specific work plan and/or SSQA, and will need prior approval by the BVCP. An explanation as to why non-standard methods are being proposed should also be included in the site-specific work plan and/or SSQA.

All QC documentation must be provided with each analytical deliverable package. The contractor will be responsible for ensuring all analytical data provided by the contractor's laboratory for the project meets the contract requirements and the requirements of this QAPP.

B.5 QUALITY CONTROL

A number of field and laboratory QC checks will be required to ensure data meet the project DQOs. The principal quality attributes important to site assessment projects are precision, accuracy, comparability, representativeness, and completeness. Criteria for these attributes are discussed below.

B.5.1 Principal Quality Attributes

1. Data Precision

Data Precision is a measure of the reproducibility of analytical results and is typically expressed in terms of the standard deviation among a set of data or as the relative percent difference between two measurements. Overall precision will be measured using the Relative Percent Difference (RPD) between duplicate or replicate split samples.

$$RPD = 100\left[\frac{x_1 - x_2}{\bar{x}}\right]$$

- The criterion for RPD between primary and duplicate aqueous samples for each contaminant measured above the laboratory reporting level is $\leq 30\%$.
- The criterion for RPD between primary and replicate split non-aqueous samples and for duplicate non-aqueous volatile organic compounds (VOC) samples will be $\leq 50\%$.
- The criterion for RPD between primary and duplicate air samples will be 25%.

If data fall within these limits, then the overall precision of the sampling and analytical process is adequate to meet the project DQOs. Data that do not meet these precision criteria will be qualified as described in the applicable validation procedure (Section D), and discussed in the project report.

2. Laboratory Precision

Precision of laboratory analyses is assessed by the analysis of Matrix Spike/Spike Duplicates (MS/MSD), laboratory duplicate samples, and blind performance evaluation samples. The frequency with which laboratory precision is assessed, and the performance criteria vary by

analyte, analytical method, and environmental media. The criteria and methods for assessment of laboratory precision are specified in the analytical methods.

3. Accuracy

Accuracy is a measure of the bias that exists in a measurement system. The accuracy of laboratory analyses will be assessed by analysis of preparation/method blanks, laboratory control samples, surrogates, internal standards, matrix spikes, and blind performance samples. The frequency with which laboratory accuracy is assessed, and the performance criteria vary by analyte, analytical method, and environmental media. Criteria for laboratory accuracy are specified in the analytical methods.

Field accuracy will be assessed through the analysis of trip blanks and field equipment rinse blanks. Contaminants should not be detected above the laboratory reporting level in trip blanks and equipment rinse blanks. Any data that do not meet these accuracy criteria will be qualified as described in the applicable validation procedure. The BVCP Project Manager and applicant's contractor will evaluate all qualified data on a project-specific basis, and determine how/whether to use the data.

4. Data Comparability

Comparability is the degree of confidence with which one data set can be compared to another. The objective of comparability for this QAPP is to ensure that sampling data developed during the project investigation may be readily compared to each other and to the appropriate screening benchmarks. All data will be reported as degrees Celsius (flash point); pH units; µg/l or mg/l for water, liquids or Toxicity Characteristic Leachate Procedure (TCLP); µg/kg or mg/kg for soil, sediment or other solids; and µg/m3 for air. Comparability is further addressed by using appropriate field and laboratory methods that are consistent with current standards of practice as approved by EPA.

5. Data Representativeness

Representativeness is the degree to which sampling data accurately and precisely depicts selected characteristics such as parameter variations at a sampling point or an environmental condition and is ensured for projects under this QAPP in several specific ways:

- Use of correct sampling procedures and equipment
- Adherence to QA and QC requirements for ensuring sampling integrity
- Collection of an adequate amount of sampled material
- Selection and implementation of appropriate analytical measurement method, including sample preparation

6. Data Completeness

Completeness is the measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under "normal" conditions and is expressed as a percentage of the amount of valid data obtained compared to the amount that was planned. One hundred percent of data completeness is desired for the collection of field samples for all project investigations. If less than 100 percent is received, the BVCP Project Manager will decide if the valid data obtained from a measurement system

compared to the amount that was expected to be obtained under normal conditions is sufficient to meet the project DQOs. If not, additional sampling may be required.

B.5.2 QC Samples

QC samples will be required to verify the validity of analytical results and to assess whether the samples were contaminated from sources not directly attributable to releases at the site (such as improper decontamination, cross-contamination, laboratory contamination, etc.). The field QC samples proposed for collection will be included in the site-specific work plan. Field QC samples include the following as appropriate:

- Trip blanks indicate if any activities after obtaining the trip blank may have contaminated samples during transport.
- Field blanks are samples obtained in the field to determine if contaminants were introduced by sample containers, preservatives, sampling procedures, etc.
- Rinsate samples are obtained to verify adequate decontamination of sampling equipment.
- Replicate samples (split samples) are obtained by dividing or splitting one sample that has been mixed or homogenized into two samples for separate analysis. Replicate samples primarily assess precision associated with analytical procedures, and to a lesser extent, sample handling procedures. Replicate split samples of soils or other non-aqueous materials are not recommended if volatile organics analyses are requested due to the potential loss of the volatiles during the mixing process. If soil samples will be analyzed for VOCs, duplicate samples should be collected prior to mixing. However, please note that there may be a greater potential for inconsistency due to the heterogeneous nature of soils or other non-aqueous media
- Duplicate water samples are used primarily to assess precision associated with sampling methodology, and to a lesser extent sample heterogeneity and analytical procedures. Duplicate soil samples are used primarily to determine the variability or heterogeneity of the sampled media.

For all projects involving the collection of aqueous samples, a trip blank will be included at a frequency of one per cooler if the proposed analysis includes VOCs or semi-volatile organic compounds (SVOCs). An equipment rinsate blank will be collected for projects where the sampling equipment is decontaminated in the field for reuse. The equipment rinsate blank will be collected at a frequency of one per separate sampling event (mobilization) for each different combination of sampling equipment; decontamination method, and analytical parameter. Duplicate or replicate samples for each media (groundwater, surface water, soil/sediment, air) should be collected at a frequency of 10% of the total number of samples, with a medium of one duplicate or replicate per medium per sampling event.

BVCP will collect duplicate or replicate samples from the site, including, but not necessarily limited to, post-remediation verification samples at BVCP sites. The goal is to enhance the credibility of BVCP cleanups by documenting MDNR's direct oversight of verification

sampling, as well as confirming the analytical results. BVCP will collect a limited number of samples (approximately 10% of the total number of samples), and pass the analytical costs back to the sites as oversight costs, as allowed by our regulations.

Contaminants should not be detected above the laboratory reporting level in trip blanks, field blanks, and equipment rinse blanks. Any data that do not meet these accuracy criteria will be qualified on sample results. The BVCP Project Manager and contractor personnel will evaluate all qualified data on a project-specific basis, and determine how/whether to use the data.

All QC samples will be documented in the sampling report.

Laboratory QC samples include duplicates, spikes, laboratory blanks, and performance evaluation samples, and are performed by the fixed laboratory according to the approved laboratory QA/QC plans.

B.6 INSTRUMENT/EQUIPMENT TESTING, INSPECTION AND MAINTENANCE

Field analytical instruments used during this project will be maintained and calibrated according to instructions provided by the instrument manufacturer, and other appropriate scientific and technical guidance and standards pertinent to the specific instrument in use. The contractor will be responsible for performing operational checks on all field equipment prior to use in the field. An operational problem with any field instrumentation will be noted by the contractor in the field notebook. Daily or regular calibration of field instrumentation will be according to applicable SOPs and manufacturer's instructions and indicated or referenced in the site-specific work plan.

Fixed laboratory equipment for contract laboratories used for quantitative sample analysis will be tested, inspected, calibrated and maintained according to the specific analytical equipment requirements as stated in the SOPs of the laboratory, in accordance with manufacturer-specified procedures or method-specified procedures, as appropriate.

B.7 INSTRUMENT/EQUIPMENT CALIBRATION AND FREQUENCY

Maintenance and calibration procedures will be conducted in accordance with manufacturers' instrument manuals, method-specified procedures and the laboratory SOPs, as appropriate.

B.8 INSPECTION/ACCEPTANCE OF SUPPLIES AND CONSUMABLES

Inspection and acceptance of supplies and consumables will be conducted according to applicable SOPs. Any supplies and consumables used in the sample collection process or instrument calibration such as sample bottles, bailers, dedicated tubing, deionized water, calibration gases, etc., will be inspected upon receipt and prior to use.

B.9 NON-DIRECT MEASUREMENTS

Several types of data and information may be obtained from non-measurement sources for use in projects conducted under this QAPP. The primary types of non-measurement data are Phase I ESAs, site reconnaissance, interviews of site owners or operators, published reference books and resources, databases, and internet resources. These data may be used to design sampling plans and may be used with the directly measured data collected during each project to evaluate the potential need for further site characterization, remediation and/or suitability for development.

Non-direct measurement data will be documented and referenced in any document for which they are used.

B.10 DATA MANAGEMENT

Data management, including chain-of-custody review and correction, data review, reduction and transfer to data management systems, quality control charts, quality control procedures, and sample receipt, storage and disposal, will be in accordance with applicable SOPs and accepted industry practices.

Documentation will be in accordance with applicable SOPs and accepted industry practices, and will include the sampling reports, copy of the chain-of-custody, and field notes or other supporting documentation with the analytical results. Data reduction will occur in accordance with contractor analytical SOPs for each parameter. If difficulties are encountered during sample collection or sample analyses, a brief description of the problem will be provided in the sampling report prepared by contractor. Data reporting will be in accordance with applicable SOPs and will include, at a minimum:

- Sample documentation (location, date and time of collection and analysis, etc.)
- Chain-of-custody forms
- Initial and continuing calibration
- Determination and documentation of detection limits
- Analyte(s) identification
- Analyte(s) quantitation
- Quality Control sample results

Adequate precautions will be taken during the reduction, manipulation, and storage of data in order to prevent the introduction of errors or the loss or misinterpretation of data.

C: ASSESSMENT AND OVERSIGHT

C.1 ASSESSMENTS AND RESPONSE ACTIONS

This section describes the internal and external checks necessary to ensure that all elements of the QAPP are implemented correctly as prescribed, that the quality of the data generated by implementation of the QAPP is adequate, and that any necessary corrective actions are implemented in a timely manner.

C.1.1 Laboratory Performance Assessment

Laboratories will comply with all of the EPA and the National Environmental Laboratory Accreditation Conference (NELAC) requirements for laboratory QA programs. Data resulting from the participation in the NELAC program shall be reviewed by the laboratory Quality Assurance Manager and any problems shall be addressed.

C.1.2 Field Performance Assessment

The auditor in charge of field QA will conduct audits of field activities according to contractor QA field auditing procedures. The process of choosing when field audits are conducted is not based on a particular project or site-sampling event, but rather on

assuring that each person involved in sample collection is audited at least once per year. The contractor's field QA auditor will have the responsibility for initiating and implementing response actions associated with findings identified during the field audit. The field personnel shall properly address any response actions needed.

C.1.3 Overall Project Performance Assessment

EPA VII conducts periodic QA audits of the state's environmental programs. These evaluations normally include some type of review of the program's quality system, and may include review of QAPPs.

C.1.4 Data Validation

All field and laboratory data will be subject to validation to review for accuracy, precision, completeness, representativeness and comparability. Data validation is discussed in more detail in Section D. The acceptance criteria for measurement data are discussed in Section B.5.

C.2 REPORTS TO MANAGEMENT

Data from the contractor's laboratory will be submitted to the BVCP Project Manager as an appendix to the final report using the laboratory analytical report sheets. The report sheets will include documentation of the sampling location, sample description, date of collection, collector, analysis performed and results, date of analysis, and analytical method used. A copy of the chain-of-custody and the lab results should also be attached to the final report. In addition, a discussion of data quality should be provided with the sampling report.

Field performance assessment audits will be documented by the contractor's field QA auditor in a written report that will be kept on file at the contractor's office. Results from the laboratory's audit studies will be kept on file at the contractor's office.

Comments and recommendations from the EPA Region VII periodic QA audits of state environmental programs are provided to the Department QA manager and used by Department management and staff to take any corrective actions which may be needed.

D: DATA VALIDATION AND USABILITY

D.1 DATA REVIEW, VERIFICATION AND VALIDATION

To ensure that measurement data generated when performing environmental sampling activities are of an appropriate quality, all data will be validated. Data validation is a systematic procedure for reviewing a body of data against a set of established criteria to provide a specified level of assurance of its validity prior to its intended use. The techniques used must be applied to the body of the data in a systematic and uniform manner. The process of data validation must be objective and independent of the data production process. All data, as applicable, will be validated in accordance with EPA *Guidance on Environmental Data Verification and Data Validation, Data Quality Assessment: A Reviewers Guide*, and *Data Quality Assessment: Statistical Tool for Practitioners*. Any deviations will be documented and provided with the analytical data report.

D.2 VERIFICATION AND VALIDATION METHODS

D.2.1 Documentation, Data Reduction and Reporting

Documentation will include the sampling reports, copy of the chain-of-custody, and field notes or other supporting documentation with the analytical results. Data reduction will occur in accordance with the laboratory's analytical SOPs for each parameter. If difficulties are encountered during sample analyses, a brief description of the problem will be provided.

Data derived from sampling events undertaken for projects under the oversight of the BVCP will be reported to the BVCP Project Manager as discussed in Section C.2, Reports to Management.

D.2.2 Data Validation

Data validation will occur as described in the analytical SOPs for each parameter and the laboratory SOPs for data review. Data validation is accomplished using control charts and data review checklists. Discrepancies are noted in the analytical file and appropriate data flags are used. If data is determined to be outside of control limits, the data is flagged on the report of analysis.

The laboratory personnel and contractor will look at matrix spikes/matrix spike duplicates, lab blanks, and lab duplicates to ensure they are acceptable. The sample collector will compare the sample descriptions with the field sheets for consistency and ensure that any anomalies in the data are documented. The contractor will perform a final review and approval to ensure that the data meets the quality objectives of this QAPP as discussed in Section B.5. and, if applicable, the SSQA. The contractor's review and approval is a check on the reviews conducted by the laboratory to ensure consistency of all field and analytical data that is generated by the contractor.

D.3 RECONCILIATION WITH USER REQUIREMENTS

Once the final report is submitted, the BVCP Project Manager will review the field QA samples to determine if they appear to indicate a problem with meeting quality objectives. If problems are indicated, the BVCP Project Manager will contact the contractor to discuss and attempt to reconcile the issue. Completeness will also be evaluated to determine if the completeness goal for this project has been met. If data quality indicators do not meet the project's requirements as outlined in this QAPP and applicable SSQA, the data may be discarded and re-sampling may occur. The BVCP Project Manager will determine the cause of the failure (if possible) and make the decision to discard the data and re-sample. If the failure is tied to the analyses, calibration and maintenance techniques will be reassessed as identified by the appropriate lab personnel. If the failure is associated with the sample collection and re-sampling is needed, the sampling methods and procedures will be reassessed as identified by the field audit process.

Corrective action will be undertaken by all parties to address specific problems as they arise. Corrective actions required will be identified through the use of control charts for chemical

analyses, precision and accuracy data, through performance auditing, and through systems audits.

REFERENCES

- EPA Guidance on Environmental Data Verification and Data Validation (G-8), EPA/240/R-02/004, November 2002
- EPA Guidance Data Quality Assessment: A Reviewer's Guide (G-9R), EPA/240/B-06/002, February 2006
- EPA Guidance Data Quality Assessment: Statistical Tools for Practitioners (G-9S), EPA/240/B-06/003, February 2006
- EPA Guidance on Systematic Planning Using the Data Quality Objective Process (G-4), EPA/240/B-06/001, February 2006
- EPA Guidance for Quality Assurance Project Plans (G-5), EPA/240/R-02/009, December 2002.
- EPA Requirements for Quality Assurance Project Plans (R-5), EPA/240/B-01/003, March 2001
- EPA Systematic Planning: A Case Study for Hazardous Waste Site Investigations (CS-1), EPA/240/B-06/004, February 2006
- MDNR-ESP-210-Quality Assurance/Quality Control for Environmental Data Collection

APPENDIX A: LISTING OF ACRONYMS & TERMS

ACM	Asbestos-Containing Material
BVCP	Brownfields/Voluntary Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COCs	Contaminants of Concern
CSM	Conceptual Site Model
DEQ	Division of Environmental Quality
DTL	Default Target Level
DQO	Data Quality Objectives
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
HAZWOPER	Hazardous Waste Operations and Emergency Response
HWP	Hazardous Waste Program
LBP	Lead-Based Paint
LTS	Long-term Stewardship
MCL	Maximum Contaminant Level
MDNR	Missouri Department of Natural Resources
MRBCA	Missouri Risk-based Corrective Action Process
MS/MSD	Matrix Spike/Spike Duplicates
NELAC	National Environmental Laboratory Accreditation Conference
PID	Photoionization Detector
PPE	Personal Protection Equipment
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QMP	Quality Management Plan
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
RMP	Risk Management Plan
RPD	Relative Percent Difference
SOP	Standard Operating Procedure
SSQA	Site-Specific Quality Assurance Project Plan Addendum
SVOC	Semi-Volatile Organic Compound
TCLP	Toxic Characteristic Leaching Procedure
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound
WQC	Water Quality Criteria
XRF	X-ray Fluorescence

Duplicate or co-located sample is a sample obtained from the same location, at the same time, and of the same material as the original sample. Duplicate water samples are used primarily to assess precision associated with sampling methodology, and to a lesser extent sample heterogeneity and analytical procedures. Duplicate soil samples are used primarily to determine

the variability or heterogeneity of the sampled media. Due to the heterogeneity of soils, caution must be used if attempting to assess precision associated with sampling methodology or analytical procedures.

Hazardous Substance means a substance defined as hazardous pursuant to federal rule 40 CFR 302.4, which includes asbestos and Polychlorinated Biphenyls (PCBs); any substance designated pursuant to Section 311(b)(2)(A) of the federal Water Pollution Control Act; any toxic pollutant listed under Section 307(a) of the federal Water Pollution Control Act; any hazardous air pollutant listed under Section 112 of the Clean Air Act; any imminently hazardous chemical substance or mixture with respect to which the Administration of EPA has taken action pursuant to Section 7 of the Toxic Substances Control Act; any hazardous waste; any hazardous material designated by the Secretary of the U.S. Department of Transportation under the Hazardous Materials Transportation Act; any radioactive materials; or any petroleum product.

Hazardous waste means waste defined to be hazardous pursuant to the Missouri Hazardous Waste Management Law Section 260.350 to Section 260.430 or pursuant to federal rule 40 CFR 261.

Replicate split sample is obtained by dividing or splitting one sample that has been mixed or homogenized into two samples for separate analysis. A replicate split is collected primarily to assess precision associated with analytical procedures and to a lesser extent sample handling procedures. Replicate split samples of soils or other non-aqueous materials are not recommended if volatile organics analyses are requested due to the potential loss of the volatiles during the mixing process. Duplicate samples for volatile organics analyses are sometimes collected prior to mixing, however, there may be a greater potential for inconsistency due to the heterogeneous nature of soils or other non-aqueous media.

APPENDIX B: ANALYTICAL REQUIREMENTS

The detection limits, as specified in 40 CFR 136 Appendix A and the EPA SW-846 Methods, are sufficient for most project under the oversight of the BVCP. The accuracy and precision of each analytical method are determined by using spikes and spike duplicate analyses, as specified in the EPA SW-846 methods.

APPENDIX E

SITE-SPECIFIC QUALITY ASSURANCE ADDENDUM TO MDNR QAPP

B/VCP SITE-SPECIFIC QAPP ADDENDUM FORM

MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR AND LAND PROTECTION DIVISION
HAZARDOUS WASTE PROGRAM
BROWNFIELDS/VOLUNTARY CLEANUP PROGRAM (BVCP)
SITE-SPECIFIC QUALITY ASSURANCE PROJECT PLAN ADDENDUM (SSQA)

I. SITE NAME AND LOCATION:

SITE NAME: Mayview School

ADDRESS OR OTHER LOCATION IDENTIFIER: Long Rd

CITY: Mayview	COUNTY: Lafayette	STATE: Missouri	ZIP: 64071

II. PROJECT MANAGEMENT INFORMATION:

Consultant: Seagull Environmental Technologies, Inc.	E-MAIL: bjones@seagullenvirotech.com
ADDRESS: 121 NE 72nd Street, Gladstone, MO 64118	
PHONE: 816-682-4089	FAX:

It should be noted that Seagull is completing the RAP and SSQA; however, Seagull will not be conducting or overseeing the cleanup activities. A remediation contractor will be selected through a procurement process conducted by EIERA.

DISTRIBUTION LIST (Check as appropriate):

- X BVCP Project Manager:
- ☐ Consultant/Contractor Director:
- X Consultant/Contractor Project Manager:
- X Consultant/Contractor Project Field Superintendent:
- ☐ Consultant/Contractor Laboratory Personnel:
- ☐ Technicians (Specify all):
- X Other (Specify): EPA Region 7 and Property Owner

PROJECT TYPE (Check as appropriate):

☐ Site Investigation/Characterization ✠ Remedial Action ☐ Risk Management ☐ Other (specify):

PROJECT DESCRIPTION: (Note: This SSQA supplements the Generic QAPP for Brownfields/Voluntary Cleanup Program Sites, and includes documentation only for the specific site as indicated above.)

*In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.

DATA QUALITY OBJECTIVES AND CRITERIA:

Detection Limits:	✠ According to Generic Site Assessment QAPP	☐ Identified in attached table
Accuracy:	✠ According to Generic Site Assessment QAPP	☐ Identified in attached table
Representativeness:	✠ According to Generic Site Assessment QAPP	☐ Identified in attached table
Comparability:	✠ According to Generic Site Assessment QAPP	☐ Identified in attached table
Completeness:	✠ According to Generic Site Assessment QAPP	☐ Identified in attached table

*In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.

B/VCP SITE-SPECIFIC QAPP ADDENDUM FORM

SPECIAL TRAINING/CERTIFICATION REQUIREMENTS:

☐ OSHA 40-hour (HAZWOPER) ☐ Geoprobe Operator ☐ Drill Rig Operator ☐ Mobile GC Field Analyst
☐ In-Field XRF Operator ☒ Other (specify): Asbestos and LBP abatement contractor with associated worker certifications

DOCUMENTATION AND RECORDS (Check appropriate boxes):

☐ Field Analytical Sheets	☒ Log Book	☒ Photos
☒ Site Maps/Figures	☒ Chain-of-Custody	☐ Property Ownership Records
☐ Environmental Records Report	☒ Utility Clearance Forms	☒ Health and Safety Plan

Other Documentation (Specify):

SAMPLING PROCESS DESIGN:

*In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.

A. General Sampling Approach (Check appropriate boxes):

☒ Judgmental Sampling ☐ Transect Sampling ☐ Search Sampling ☐ Systematic Grid
☐ Random Sampling ☐ Stratified Random Sampling ☐ Systematic Random Sampling

B. Screening/Definitive Sampling (Check appropriate boxes):

☐ Screening without Definitive Confirmation
☐ Screening With Definitive Confirmation
NOTE: Minimum Confirmation Rate of ___ % for All Field Analytical Screening Samples Collected
☒ Definitive Sampling

SAMPLING METHODS (Specify all to be utilized):

Matrix:	Methods:	SOPs/Guidance:	Sampling Equipment Proposed:

*In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.

SAMPLE HANDLING AND CUSTODY (Check appropriate box):

☐ In accordance with Generic QAPP and SOPs ☐ Other (specify):

*In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.

ANALYTICAL METHODS (Check appropriate box):

☐ Identified in Attached Table ☐ Identified Below (Describe):

*In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.

B/VCP SITE-SPECIFIC QAPP ADDENDUM FORM

QUALITY CONTROL (Check appropriate box):

☐ Not Applicable ☐ In accordance with Generic QAPP ☐ Specific requirements (state):

Describe Field QC Samples to be collected:

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

INSTRUMENT/EQUIPMENT TESTING, INSPECTION, CALIBRATION/FREQUENCY AND MAINTENANCE (Check appropriate box):

☐ Not Applicable ✠ In accordance with Generic QAPP ☐ Specific requirements (state):

Describe instrument/equipment, etc. proposed for use in this project subject to the above requirements:

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

INSPECTION/ACCEPTANCE OF SUPPLIES AND CONSUMABLES (Check appropriate box):

☐ Not Applicable ✠ In accordance with Generic QAPP ☐ Specific requirements (state):

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

NON-DIRECT MEASUREMENTS (Check appropriate box):

☐ Not Applicable ✠ In accordance with Generic QAPP ☐ Specific requirements (state):

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

DATA MANAGEMENT (Check appropriate box):

✠ In accordance with Generic QAPP ☐ Specific requirements (state):

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

ASSESSMENT AND RESPONSE ACTIONS (Check appropriate box):

✠ In accordance with Generic QAPP ☐ Specific requirements (state):

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

REPORTS TO MANAGEMENT (Check appropriate box):

✠ In accordance with Generic QAPP ☐ Specific requirements (state):

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

B/VCP SITE-SPECIFIC QAPP ADDENDUM FORM

DATA VALIDATION AND USABILITY (Check appropriate box):

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

☒ Data review and verification will be performed by the contractor or delegate in accordance with Generic QAPP, with data validation conducted according to USEPA guidance and Generic QAPP

☐ Data review, validation and verification will be performed as follows, with data validation conducted according to alternate methods (describe):

RECONCILIATION WITH USER REQUIREMENTS (Check appropriate box):

☒ In accordance with Generic QAPP **☐ Specific requirements (state):**

***In general, site activities will be conducted in accordance with the Generic Site Assessment QAPP; however, the project will not involve the collection of any environmental samples.**

B/VCP SITE-SPECIFIC QAPP ADDENDUM FORM

APPROVALS:

BVCP Project Manager Name	**Signature**	**Date**
Contractor Director Name	**Signature**	**Date**
Contractor Project Manager Name	**Signature**	**Date**
Contractor Field Superintendent Name	**Signature**	**Date**

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that_____ as principal and _____, as surety are held and firmly bound to the Mayview MO Foundation, in the sum of **FULL Contract amount in words and numbers**

_____

Dollars ($_____) to be paid to the Mayview MO Foundation, and for the lawful payment of said sum we, and each of us, hereby bind ourselves, our heirs, our executors, administrators, successors and assigns firmly by these presents,

The condition of this bond is such that:

WHEREAS the above-named principal did on the ____ day of _____, 2018, enter into a contract with the Mayview MO Foundation for:

Asbestos Containing Materials Remediation In Accordance with INVITATION FOR BID #2018-01

NOW, THEREFORE, if the above-named principal shall well and truly:

Keep and perform all of the contract on his, its' or their part to be kept and performed, and faithfully comply with all of the laws of the State of Missouri applicable to the aforesaid contract and this bond and the conditions of said contract, and at the time stipulated in said contract or within a reasonable time if not time as stipulated;

Then this obligation shall be void, otherwise it shall remain in full force and effect.

It is understood and agreed that this bond shall not be avoided because of changes in the plans or specifications for the work, or because of extensions of time for the performance of work, and the surety above-named does hereby waive notice of and does hereby consent to any such changes or extensions of time.

In addition to any other remedies which may be had by the Mayview MO Foundation (Owner), under this bond, the Owner may in case of default or abandonment of the contract hereinbefore referred to notify the surety hereto by registered or certified mail directed to the surety or to its attorney-in-fact for it authorized at the time of the execution of this bond that such default or abandonment has occurred, which such notice need not be detailed but may be in generalities, and the surety shall have the obligation to inquire into the nature of such default or abandonment and to thereafter within sixty (60) days from the date of such notice proceed toward completion without undue delay of the improvement in accordance with the contract aforesaid; and in the event of default on the part of the surety to proceed to complete as aforesaid the Mayview MO Foundation, shall have the right to itself complete the work, and upon completion to be reimbursed by the principal, the surety or both of them for the cost of said completion including cost of re-advertisements, preparation of new plans, contracts, and all other ordinary and reasonable expenses in connection with completion of the work.

This bond shall be governed by the laws of the State of Missouri. The parties hereto agree that should any litigation arise out of this bond, the venue for such litigation shall be in the Circuit Court of Lafayette County, Missouri, and the parties hereto expressly waive all rights to venue inconsistent therewith.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 2018, or have caused these presents to be executed by our authorized agent on the same day and year.

Company: _____

By: _____

Surety: _____

By: _____

Approved as to Form:

_____
Mayview MO Foundation representative

PAYMENT BOND FOR LABOR AND MATERIALS

KNOW ALL MEN BY THESE PRESENTS that _____ as principal and _____, as surety are held and firmly bound to the Mayview MO Foundation, in the sum of **FULL Contract amount in words and numbers** _____ **Dollars ($_____)** to be paid to the Mayview MO Foundation, and for the lawful payment of said sum we, and each of us, hereby bind ourselves, our heirs, our executors, administrators, successors and assigns firmly by these presents,

The condition of this bond is such that:

WHEREAS the above-named principal did on the _____ day of _____, 2018, enter into a contract with the Mayview MO Foundation for:

Asbestos Containing Materials Remediation In Accordance with INVITATION FOR BID #2018-01

NOW, THEREFORE, if the above-named principal shall well and truly:

Pay for any and all materials, lubricants, oil, gasoline, grain, hay, feed, coal and coke, repairs on machinery, groceries and foodstuffs, equipment and tools consumed or used in connection with the construction of the work afore-described, and all insurance premiums both for compensation and for all other kinds of insurance on said work above described, and for all labor performed in the work whether by the principal or by subcontractor or otherwise and at the prevailing hourly rate of wages made applicable to the work as specified by the contract (if a prevailing hourly rate of wages shall have been so specified).

Then this obligation shall be void, otherwise it shall remain in full force and effect.

It is understood and agreed that this bond shall not be avoided because of changes in the plans or specifications for the work, or because of extensions of time for the performance of work, and the surety above-named does hereby waive notice of and does hereby consent to any such changes or extensions of time.

It is understood and agreed that any person entitled to payment for any of the matters upon which this bond is conditioned shall have the right in his name or in the name of the Mayview MO Foundation, to bring suit upon this bond for the recovery of such payment. It is further agreed that no such suit shall be instituted after the expiration of ninety (90) days from the completion of the contract hereinbefore referred to.

This bond shall be governed by the laws of the State of Missouri. The parties hereto agree that should any litigation arise out of this bond, the venue for such litigation shall be in the Circuit Court of Lafayette County, Missouri, and the parties hereto expressly waive all rights to venue inconsistent therewith.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 2018, or have caused these presents to be executed by our authorized agent on the same day and year.

Company: _____

By: _____

Surety: _____

By:_____

Approved as to Form:

_____
Mayview MO Foundation Representative

ATTACHMENT D

EXAMPLE

AFFIDAVIT

STATE OF MISSOURI)
) SS
_____ OF _____)

I, the undersigned, am over the age of 18 years and have personal knowledge of the matters stated herein.

I am a duly authorized officer of _____, a _____ [corporation] [limited liability company] (the *"Company"*) and am authorized by the Company to attest to the matters set forth herein.

The Mayview MO Foundation and the Company are parties to the [INSERT NAME OF AGREEMENT], dated _____, ____ (the "Agreement").

I hereby affirm that the Company is enrolled and participates in a "federal work authorization program" as defined in Section 285.525 of the Revised Statutes of Missouri, as amended, with respect to the employees of Company working in connection with the Environmental Cleanup (as such term is defined in the Agreement).

The Company does not knowingly employ any person who is an "unauthorized alien" as defined in Section 285.525 of the Revised Statutes of Missouri, as amended, in connection with the Environmental Cleanup.

Further Affiant Sayeth Not.

_____

By: _____
Title: _____

Subscribed and sworn to before me this _____ day of _____.

_____
Notary Public

My commission expires on:_____

ATTACHMENT E

AFFIDAVIT OF COMPLIANCE

To be submitted with Vendor's Bid

_____We DO NOT take exception to the IFB Documents/Requirements.
_____We TAKE exception to the IFB Documents/Requirements as follows:

Specific exceptions are as follows: _____

Company Name _____

By_____
Authorized Person's Signature

_____
Print or type name and title of signer

Company Address_____
_____
_____
Telephone Number_____
Fax Number_____

Date_____

ADDENDA

Bidder acknowledges receipt of the following addendum:

Addendum No. ___

Addendum No. ___

Addendum No. ___

Addendum No. ___

Addendum No. ___

Email_____

Federal Tax ID No._____

ATTACHMENT F

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

This certification is required by the Department of Education regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, for all lower tier transactions meeting the threshold and tier requirements stated at Section 85.110.

Instructions for Certification

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled A Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion-Lower Tier Covered Transactions, and without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may but is not required to check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* NAME OF APPLICANT
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE Prefix: * First Name: Middle Name: * Last Name: Suffix: * Title:
SIGNATURE Completed on submission to Grants.gov DATE Completed on submission to Grants.gov

Optional - You may attach 1 file to this page.

Add Attachment | Delete Attachment | View Attachment

General Decision Number: MO180053 06/22/2018 MO53

Superseded General Decision Number: MO20170053

State: Missouri

Construction Type: Building

Counties: Caldwell, Clinton, Lafayette, Platte and Ray
Counties in Missouri.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2018
1	02/02/2018
2	03/16/2018
3	04/06/2018
4	05/04/2018
5	05/25/2018
6	06/15/2018
7	06/22/2018

ASBE0027-004 08/16/2017

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR	$ 35.50	25.75

BOIL0083-005 01/01/2017

	Rates	Fringes
BOILERMAKER	$ 36.56	28.11

BRMO0003-003 06/01/2017

	Rates	Fringes
TILE FINISHER	$ 24.58	8.54
TILE SETTER	$ 35.16	13.57

BRMO0015-003 05/01/2017

CALDWELL & CLINTON COUNTIES

	Rates	Fringes
BRICKLAYER	$ 32.77	17.74

BRMO0015-009 04/01/2018

LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
BRICKLAYER	$ 35.43	19.73

CARP0005-007 05/01/2018

CALDWELL COUNTY

	Rates	Fringes
CARPENTER (Including Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation, Scaffold Building & Batt Insulation)	$ 34.18	17.10

CARP0005-017 05/01/2018

PLATTE & RAY COUNTIES

	Rates	Fringes
CARPENTER (Including Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation, Scaffold Building & Batt Insulation)	$ 38.85	17.10

CARP0005-018 05/01/2018

LAFAYETTE COUNTY

	Rates	Fringes
CARPENTER (Including Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation, Scaffold Building & Batt Insulation)	$ 36.52	17.10

CARP0110-008 05/01/2018

CLINTON COUNTY

	Rates	Fringes
CARPENTER (Including Acoustical Ceiling Installation, Drywall Hanging, Form Work, Metal Stud Installation, Scaffold Building & Batt Insulation)	$ 33.32	17.10

ELEC0124-003 08/28/2017

LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 38.35	22.01

ELEC0545-006 06/01/2017

CALDWELL & CLINTON COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 31.00	15.60

ENGI0101-016 04/01/2016

CALDWELL COUNTY

	Rates	Fringes
OPERATOR: Crane		
Boom 150 Feet & Over	$ 37.79	15.97
Boom 225 Feet & Over	$ 39.04	15.97
Boom 300 Feet & Over	$ 40.04	15.97
Boom 350 Feet & Over	$ 41.04	15.97
Boom Less Than 150 Feet	$ 36.44	15.97
POWER EQUIPMENT OPERATOR:		
Backhoe/Excavator	$ 35.63	15.97
Bobcat/Skid Loader	$ 35.63	15.97
Forklift	$ 34.29	15.97
Grader/Blade	$ 35.63	15.97
Loader	$ 35.63	15.97
Paver	$ 35.63	15.97
Roller	$ 35.63	15.97

ENGI0101-025 04/01/2016

CLINTON, LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
OPERATOR: Crane		
Boom 150 Feet & Over	$ 39.79	15.97
Boom 225 Feet & Over	$ 41.04	15.97
Boom 300 Feet & Over	$ 42.04	15.97

Boom 350 Feet & Over	$ 43.04	15.97
Boom Less Than 150 Feet	$ 38.44	15.97
POWER EQUIPMENT OPERATOR:		
Backhoe/Excavator	$ 37.63	15.97
Bobcat/Skid Loader	$ 37.63	15.97
Forklift	$ 36.29	15.97
Grader/Blade	$ 38.44	15.97
Loader	$ 37.63	15.97
Paver	$ 37.63	15.97
Roller	$ 37.63	15.97

IRON0010-001 04/01/2017

CALDWELL & CLINTON COUNTIES

	Rates	Fringes
IRONWORKER, ORNAMENTAL, REINFORCING, AND STRUCTURAL	$ 32.65	28.85

IRON0010-011 04/01/2017

LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
IRONWORKER, ORNAMENTAL, REINFORCING, AND STRUCTURAL	$ 32.65	28.85

LABO0264-005 04/01/2018

LAFAYETTE COUNTY

	Rates	Fringes
LABORER		
Brick & Cement/Concrete Mason Tender	$ 27.85	16.10
Common or General; Asphalt Shoveler; Pipelayer	$ 27.45	16.10

LABO0264-006 04/01/2018

PLATTE COUNTY

	Rates	Fringes
LABORER		
Brick & Cement/Concrete Mason Tender	$ 28.85	16.10
Common or General; Asphalt Shoveler; Pipelayer	$ 28.45	16.10

LABO0264-008 04/01/2018

RAY COUNTY

	Rates	Fringes
LABORER		

Brick & Cement/Concrete		
Mason Tender.....$	27.85	16.10
Common or General; Asphalt		
Shoveler; Pipelayer.....$	27.45	16.10

LABO0579-002 05/01/2018

CALDWELL & CLINTON COUNTIES

	Rates	Fringes
LABORER		
Brick & Cement/Concrete		
Mason Tender.....$	25.80	13.91
Common or General; Asphalt		
Shoveler; Pipelayer.....$	25.60	13.91

PAIN0003-008 04/01/2017

CLINTON, LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
PAINTER		
Brush & Roller.....$	29.34	16.96
Drywall Finishing/Taping....$	30.34	16.96

PAIN0003-009 04/01/2017

CALDWELL COUNTY

	Rates	Fringes
PAINTER		
Brush & Roller.....$	29.34	16.96
Drywall Finishing/Taping....$	30.34	16.96

PAIN0558-002 04/01/2018

LAFAYETTE & RAY COUNTIES (West of Highway 13)

	Rates	Fringes
GLAZIER.....$	33.97	18.25

PAIN0558-003 04/13/2017

CALDWELL, CLINTON & PLATTE COUNTIES

	Rates	Fringes
GLAZIER.....$	33.97	18.25

PAIN0558-009 04/13/2017

LAFAYETTE & RAY COUNTIES (East of Highway 13)

	Rates	Fringes
GLAZIER.....$	33.97	18.25

PLAS0518-002 03/01/2018

CALDWELL COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 28.53	12.87

PLAS0518-016 04/01/2018

CLINTON, LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 31.71	19.62

PLUM0008-002 06/01/2017

PLATTE COUNTY

	Rates	Fringes
PLUMBER, Excludes HVAC Pipe Installation	$ 43.80	21.14

PLUM0008-015 06/01/2017

LAFAYETTE & RAY COUNTIES

	Rates	Fringes
PLUMBER, Excludes HVAC Pipe Installation	$ 43.80	21.14

PLUM0045-006 09/01/2017

CALDWELL & CLINTON COUNTIES

	Rates	Fringes
PIPEFITTER, Includes HVAC Pipe Installation	$ 35.55	22.25
PLUMBER, Excludes HVAC Pipe Installation	$ 35.55	22.25

PLUM0533-006 06/01/2017

LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
PIPEFITTER, Includes HVAC Pipe Installation	$ 44.48	21.15

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* ROOF0020-005 06/01/2018

CALDWELL & CLINTON COUNTIES

	Rates	Fringes

ROOFER.....$ 28.25 15.77

ROOF0020-007 06/01/2017

LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
ROOFER	$ 32.55	18.09

SFMO0314-003 01/01/2017

PORTION OF CLINTON, LAFAYETTE, PLATTE & RAY COUNTIES WITHIN A 30 MILE RADIUS OF THE INTERSECTION OF PERSHING & BROADWAY IN KANSAS CITY, MO

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers)	$ 36.74	19.92

SFMO0669-002 04/01/2017

CALDWELL & REMAINDER OF OTHER COUNTIES

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers)	$ 34.79	15.84

SHEE0002-025 07/01/2012

LAFAYETTE, PLATTE, & RAY COUNTIES

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation	$ 38.39	17.70

SHEE0002-026 07/01/2012

CLINTON & CALDWELL COUNTIES

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation	$ 38.39	17.70

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* TEAM0541-002 04/01/2018

LAFAYETTE, PLATTE & RAY COUNTIES

	Rates	Fringes
TRUCK DRIVER, Includes Dump Truck	$ 33.24	14.25

SUMO2010-052 06/14/2010

	Rates	Fringes
OPERATOR: Hoist	$ 26.02	13.01
PAINTER: Spray	$ 17.78	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198

indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on

a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION